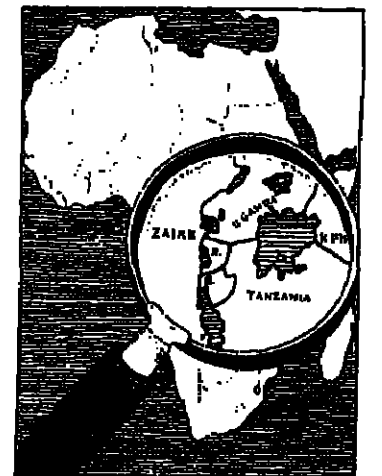


NUS, miners and the law: David Jobbins looks at the tangled question of ULTRA VIREs law and student support for NUM strikers (page 11)

Testing the foundations: James Dunn examines recent developments in BIBLICAL SCHOLARSHIP and concludes that theology, far from being obscure and "irrelevant", remains the model for humanities research (page 13)



Area studies have been under attack in recent months, assailed by renewed concern for a "core curriculum". A. F. Robertson defends the value of AFRICAN STUDIES (page 14)

The link between NUMBERS and STANDARDS in higher education is often asserted, only rarely quantified with any precision. Bryan and Elizabeth Taylor produce a model for the 1990s (page 15)

LAWRENCE STONE, working with leopards, reviews English governing classes in need of careful revision. J. P. Kenyon reviews *An Open Elite* and assesses its relevance for research into the early modern and industrial period (page 16)

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Nazi persecution and westward migration
Interdisciplinary courses
Philip Hobsbaum reviews D. H. Lawrence's rediscovered *Mr Noon*

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Gaudeamus igitur...

The university is a European invention – but is now a global phenomenon. The university is a very old institution – but most university systems are recent creations. On the eve of the eighth general assembly of the Conference of Rectors, Presidents and Vice-Chancellors of the European Universities, which begins in Athens on Sunday, these are the contrasts and contradictions that suggest themselves. The 300 or so participants in the Athens assembly may be suspected of secretly cherishing Eurocentric, traditional and even sentimental values, but the issues they will discuss will be blatantly even brutally global and contemporary. The background may be occupied by the ceremonial ghosts of Humboldt and Newman, but the foreground will be crowded with the political, financial, and managerial problems that are now the common experience of all European universities.

The university was born in medieval and Renaissance Europe. A small number of the institutions which will be represented in Athens next week can look back on six, seven or even eight centuries of continuous operation. The other great institutions of medieval Europe, a universal church and a Christian monarchy, are distant and dusty memories, but the university still remains a vital institution at the end of the twentieth century. Where once Aristotelian logic was chopped genes are spliced and atoms split. And for seven of the eight centuries of organization university history it remained a peculiarly European institution apart from exceptions that prove the rule like Harvard and other implants of old Europe.

Why? One answer is that although the civilizations of medieval China, India and Islam were in no way inferior to those of Europe, the university, the church, the confounding jurisdiction of feudal society, and the fragmentation of Europe into many states created a friendly environment for universities to flourish as separate institutions. In the better organized states of the east with much closer identity between religious faith and political authority no such opportunity arose.

Britain – or at least England – has had no intellectually sanctioned tradition of anti-clericalism since the Reformation. The unique nature of the Protestant establishment has meant that the gap between clergy and laity tends to follow the model of John Milton's *Lycidas* – hungry sheep fobbed off with stale intellectual mast – rather than the sharp social and economic hostilities of continental and Catholic Europe.

The link between the Reformation and mercantile or industrial take-off is well established. What it tends to disguise, though, is the more fundamental connection between Protestantism and a developing tradition of analytic thought legitimized by proof or refutation. The Protestant doctrine of sola scriptura – "by faith alone" – was arrived at intellectually in a process that, by an odd paradox, has tended to undermine the evidence for faith, leaving it as either an essence or a curious monolithic outcrop in a desert of scepticism.

Coleridge's characterization of religious thought as something "understood in exact proportion as it is believed and felt" is now conclusion rather than premise. The liberal clergy have entirely abandoned the Romantic fear of murder by dissection in favour of a rigorous self-examination that sometimes seems close to professional *fetida se*.

The last five years have seen a marked quickening of the theological pulse in Britain. *The Times* returned from an 11-month shutdown in 1979 to

Later in the eighteenth and nineteenth centuries when universities were revived and very much expanded a secular and Erastian society and a rapidly industrializing economy again created in Europe, and in North America also, conditions that particularly favoured their development. In the world outside Europe of decaying autocracies and theocracies under imperialist threat no such conditions existed.

All that was long ago. The university may have been a European invention but it is now a global institution. It must be doubted whether Europe's universities, because of their rich and unique history, have any special insight into the dilemmas which all universities now face. The university has been one of Europe's most successful exports as well as being one of its most enduring institutions; both grounds not for claiming any superiority or precedence for Europe but for suspecting that the university represents such an adaptable tradition that claims of continuity must be treated with great scepticism. The name is the same – but the institution has changed out of all recognition not once but many times.

In any case the focus of higher education policy today, inside and outside Europe, is on systems which are new rather than institutions some of which may be very old. It can be plausibly argued that the oldest system of higher education is to be found not in Europe but in the United States. Most European countries have only developed systems of higher education rather than collections of isolated institutions in the twentieth century, or even after 1945. The age of the rectors' conference itself is a revealing clue. Some of CRE's constituent members were founded in the nineteenth century. Its 25th anniversary this year, it was established as recently as 1959 in Dijon. And it should never be forgotten that these systems of higher education include significant institutions that will not be represented in Athens – the *grandes écoles* in France, the polytechnics in England, the research institutes in the front line of science and scholarship in Germany, France, Italy and elsewhere.

Onward Christian scholars

A bitter controversy about the language of common prayer. *P.N. Review's* special number "Crisis for Cranmer and King James", containing a petition for the preservation of seventeenth-century forms, was one of the most talked-about publications of that year and a reminder of the gap between senior clergy and the greater mass of communicants. More recently the Bishop David Jenkins of Durham has sparked off a sharp fundamentalist reaction, marked by a revival of the doctrine of biblical inerrancy and, to the horror of senior clergy, beliefs such as that the York Minister fire was an act of God in the literal, not just actuarial, sense. The hungry sheep had developed an unquenchable appetite for blood and militant scepticism regarding their shepherds' motives.

In academic circles, theology and divinity had moved to an increasingly peripheral position through the nineteenth century. After the travails of the Tractarian movement, academic theologians seemed to represent a conservative fastness opposed to modernism in every shape and form. Yet as Professor James Dunn shows in this week's *THESES*, theology and theologic area of intellectual concern in the late 1970s. The Bible tended to replace *Ulysses* of *The Waste Land* as the modernist text. Authority, however, was in the most obvious way the antithesis of contemporary literary criticism and historical inquiry. Frank Kermode's *The Genesis of Secrecy* and

So can a CRE assembly be more than an occasion for rather sentimental rhetoric that seems to assert a superior understanding that cannot fairly be justified? The answer is yes – for two reasons. First the universities of Europe, along with those of North America, Japan and Australia, are in the forefront of development with all its problems and opportunities. Along with these other universities they grapple with the divisive character of expert knowledge, the incestuous nature of relations between the academy and the economy, the pressures of mass socialization which is now one of their most contested roles. Like these other universities they must address the political and ultimately moral issues raised by the increasing division of world higher education into the knowledge-rich and the knowledge-poor. In other words it is their modernity not their antiquity which can justify the week-long assembly in Athens.

The second reason takes us back to those ceremonial ghosts lurking backstage. Just as the managerial issues that dominate the "public" world of higher education must be set in the context of the academic issues that are the substance of its "private" world, so both must be seen in the larger framework of deeper but simpler values. What is a university for? The fact that there cannot be a single answer in modern society does not invalidate the question. For if we do not articulate the fundamental educational purposes of our higher education systems, they will be ruled by myopic bureaucracy.

It may be easier to define these purposes within the context of the *past* than the *future*, however dispersed it may have become. It may be more satisfactory to tackle these questions at a CRE assembly which embodies that tradition than within the inevitably narrower context of particular national experiences or the transparent and antiseptic context of some abstract global university. The university has been born in Europe. It is not an arrogant wish that Europe should make a significant contribution to its modern definition.

Northrop Frye's *The Great Code*, far from representing a backlash, were the culmination of the modernist method.

In other terms, the Christian eschatology represented an escape from the cyclical pattern of sceptical historicism; the Exodus and the Resurrection represented actual, even revolutionary, eruptions of a kind not to be explained by historicism. Structuralist and theology came to surprisingly similar conclusions, both increasingly agnostic but both ultimately halted by certain irreducibles. Scripture presented what Professor David Martin has called "a model of exemplary history" rather than a mere succession of events, multi-layered, typically linked, directed towards an inscrutable goal.

History has emerged as narrative rather than as an organism. Theology, with the faint embarrassment of paradox, has been reinstated among the humanities, no longer a merely vocational concern. The populism which has reared up in reaction remains alarming but cannot obscure the tremendous intellectual vigour of its return. In 1949 Paul Tillich published his *The Shaking of the Foundations* (that embattled, ex-both Hitler and modern scientism) now seems out of place. Christianity has been restored to a more central place in the intellectual life of the West. Its apocalypticism has melted away. God and Caesar have effected détente. The foundations are there to be tested, not shaken to bits.



Fifth Column

The dominant figure in news and current affairs today is Arthur Scargill. Despite his insistence that all news is controlled and twisted by the people behind it, he seems to have a rare mastery of the media and on the whole comes out of it well.

He came out of it well also a few months ago when I had him in my house for what we called a "philosophical discussion" about the future of work. I had met him some years ago when we had shared the old platform as members of a local brains trust and had recently been attempting (not very successfully) to help his architect to steer the new building for the NUM through the local authority in Sheffield. Unusually the design involves the demolition of a listed building – of no great value, but Sheffield is short of listed buildings having demolished any they could get their hands on in the 1960s and early 1970s.

But I had for some time also had in mind a kind of continuing seminar in the polytechnic in which academics like me could discuss with people of different background one of the most important of all the social questions of our time. That is, what is happening to the nature of work, and therefore employment, especially in the light of the new technology? Must, and indeed does, make new jobs unnecessary. I could think of one with whom I would prefer to discuss this than Arthur Scargill. It came with his architect to discuss his new building and that problem.

It was a fascinating and frequently hilarious afternoon. My teenage children were captivated by him and had no doubt that they would vote for him if a vote were ever wanted (which I suppose it might be one of these days). For Arthur is not only well read and a first rate conversationalist; he can also be very funny and a superb mimic. His imitations of well known politicians were brilliantly observed; his performances as some of the toughest trade union leaders in America were as vivid as Mike Yarwood's and better in context. The sheer charm of the man is infectious. I had been driven to Sheffield by his driver and knew what loyalty he commands among his friends and staff.

The only problem was to get him to talk about the very subject we had met to discuss. References to Christ Jenkins and Barry Sheerman did not stimulate comment. Instead he sorted out parties, politicians, journalists and (for him) other popular figures. We discussed many similar conclusions, both increasingly agnostic but both ultimately halted by certain irreducibles. Scripture presented what Professor David Martin has called "a model of exemplary history" rather than a mere succession of events, multi-layered, typically linked, directed towards an inscrutable goal.

This was of course before the great strike. Reading Arthur's comments since it started it seems to me that his unwillingness to talk about the future of work was in no way untypical. In so far as he has a policy, it is to keep his mines open, however old they may be, to keep, in short, the miners down the mine. The new technology that enables them to work through remote control and reduce working hours seems not to have figured in the well publicized arguments.

Now did it with us. What then did we talk about in the three or four hours we spent that afternoon? The answer is simple and I suppose unsurprising. Arthur talked about himself.

Patrick Nutgens

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Dual demand for more resources

The two most influential bodies in higher education today reveal their agenda for the rest of the century and demand a better deal from the Government. Both the University Grants Committee and the National Advisory Body take a more optimistic view of the future demand for higher education than the current Government forecasts and their submissions to Sir Keith Joseph, Secretary of State for Education and Science, put the case for resources to match.

In an unprecedented display of unanimity, the two bodies have included a common chapter in their reports, reinterpreting the Robbins principle of access to higher education and defining its role in society. The ability to benefit becomes the dominant criterion in assessing suitability for study.

by Ngiao Crequey and John O'Leary

A trenchant call for more resources, additional academic staff and a rise in student numbers are the key recommendations in the UGC report, which demands an end to further disruption and decline.

New courses must be established, research must be strengthened, unsuitable or redundant buildings must be sold or demolished, full advantage must be taken of advances in technology to increase the effectiveness of teaching, staffing problems must be overcome, organisation must be improved, the report says. All this was necessary to undo the damage to the universities because of the cuts imposed by the Government in 1981.

Sir Peter Swinnerton-Dyer, chairman of the UGC agreed this week that the report was the committee fighting back. "It would be a bloody miracle if we got everything we want but we have to put things into a priority," he said. Eight on the list is a call for at least 900 new academic appointments a year. The number of full-time students in higher education should rise to about 600,000 by the end of the decade and there should be significant increases in home postgraduates and research studentships.

Unless the universities were given "substantial funding" there would have to be cuts, although the Government and not the UGC would have to decide what to choose.

To let such assets go to waste would

be a loss to higher education and to the nation which could not be defended, the UGC says. But universities must prune their small and weak departments, and only those that did would be rewarded financially.

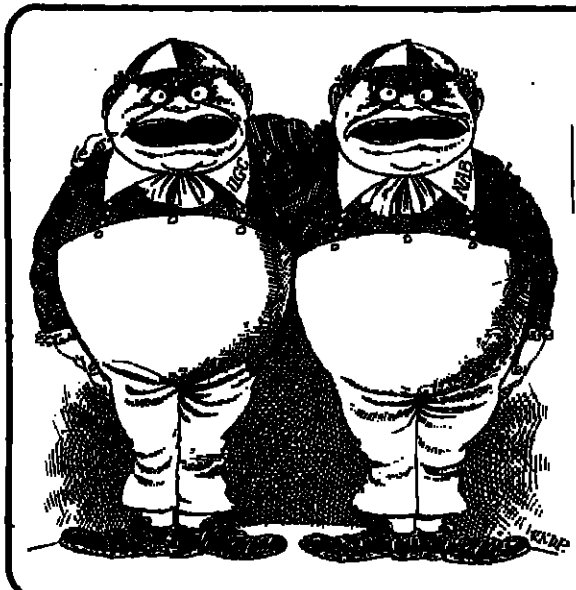
There will be more discrimination in research funding. "The pressure is too strong for us to resist even if we had wished to," Sir Peter said. The shift towards science and engineering would increase if resources were provided, but not at the expense of the arts. There are also calls for increasing the equipment grant by a quarter, creating an industrial "seed-corn" fund, a procedure for scrutinizing courses, longer probation for staff and expanded continuing education.

The report will be the main item on the agenda of the Committee of Vice-Chancellors and Principals when it meets in Cambridge next month. Lord Flowers, chairman of the CVCP said this week he thought the committee would welcome the general tenor of the report.

The Association of University Teachers said it was pleased that after three years of vacillation and bowing to Government dictates, the UGC had finally decided to stand its ground and protest.

But the AUT was concerned about two aspects of the report – the call for greater selectivity in research funding and the implication that small departments were necessarily weak.

The National Advisory Body's 10-point plan for polytechnics and colleges was given final approval at a



The great debate: full analysis of the UGC and NAB advice, i-iv

meeting chaired by Mr Peter Brooke, undersecretary for higher education, on Monday. Only minor drafting changes were demanded by the local authority members of the committee.

As a result, the controversial demand for equal funding for teaching with the universities survives in the NAB's report, despite reservations expressed by DES representatives. But the preservation of existing funding levels is made the first priority.

Other radical proposals include the introduction of a two-year degree for high-fliers, a new pool of money for research, a loosening of local authority control of colleges and polytechnics and the establishment of a centre for higher education policy studies.

Student numbers in the public sector are set at approximately their present level for the rest of the century, with the improvement of access to higher education one of the objectives of polytechnics and colleges. Another aim would be to provide more vocationally oriented courses.

The report was immediately welcomed by the National Association of Teachers in Further Education. A statement from the union expressed particular pleasure that the provision of adult and continuing education had been accepted as a major responsibility, and that the call had been made for

a common unit of resource. At Monday's meeting a start was made on two of the policies identified in the report. A statement of research was agreed, setting an initial target of £10m additional money to fund research activity in polytechnics and colleges. A working group which included two research council chairmen, endorsed the view expressed in today's report that at least £20m was required by the end of a three-year period.

It was also agreed that a start should be made on reducing the bureaucracy involved in course approvals. A pilot project will begin next month in the Yorkshire and Humberside, and Southern regional advisory councils to monitor the effects of a new system of programme approvals. A report will be presented next spring, showing what difference the new system, giving institutions power to alter courses within an agreed programme of work, would have made.

Following the committee's meeting with Sir Keith Joseph last week, in which they pressed for extra money for capital projects, it was agreed to approve a £5m capital programme under protest. Two colleges and eight polytechnics were chosen to start or continue building projects, while the committee waits for a reply to its requests to Sir Keith.

Mr Butler concedes that there are many uncertainties in the figures, especially on the cost indexing used which may differ for research. However, he also finds an increase between 1976/77 and 1982/83 in the number of academics doing full-time research, although there has been a significant fall in the numbers of full-time postgraduate students.

Sir Bruce also suggests that the apparent rise in support for research may derive from an increase in proportion of staff in science and technology, taking no account of a fall in spending on non-staff items needed for research. He stresses that university statistics for research and development are in a very unsatisfactory state.

This is one area of agreement which unites all commentators. The second annual review of Government research and development prepared by the Cabinet Office, reviewed today by Dr Robin Nicholson, the Prime Minister's scientific adviser, still relies on the UGC's own estimate of cash for university research, which is widely regarded as unreliable.

It does show for the first time how the UGC's grand total is arrived at, by adding estimates for four different areas. The UGC estimates for 1984/85 are £144m on medical research, £97m on social sciences, £222m in the natural sciences and £10m in engineering and technology. The committee is now working to refine these estimates for future years, notably by devising a new test of the amount of time academics spend on research to succeed the experiment in diary-writing some years ago which is used for current guesses.

The figures prepared by the TCC are part of the second stage of the British Association's project for a national "science audit". Other members trying to advance this idea in individual disciplines also illustrate the difficulties. All three of the BA sections which agreed to try science audits found problems with research and development price indexing. In geology, Professor Ron Oxborough of Queen's College, Cambridge found there were no

Threat to 'closed shop'

by David Jobbins

Mr Edwin Currie, MP for South Devonshire, aims to introduce legislation to end what many Conservatives regard as the National Union of Students' closed shop.

He wants to make NUS membership an individual choice rather than the present system under which all students are deemed to be members and have their union fees paid by their local authorities.

Mr Currie, an elected vice-president of the Federation of Conservative Students and a graduate of St Anne's College, Oxford, said: "People should not be involved, should stand for office and engage NUS policies are those they agree with. But I do not like the element of compulsion in it."

The bill will be introduced under the 10-minute rule procedure used by MPs to draw ministers' attention to the strength of feeling in the Commons – and at his first reading takes place on October 31, an expected stand very little chance of becoming law.

Mr Currie will try to introduce the bill early in the new Parliament. If the bill does not get the chance, next

Enter Papandreu, stage left

from Peter Scott

The harsh light suddenly broke into the Aegean twilight as Mr Andreas Papandreu, the prime minister of Greece, rose to address the assembled European ministers and vice-chancellors in Athens this week.

This was prime time television for the Greeks and a bewildering even bizarre experience for the rectors. Transported 15 miles down the coast to a luxury hotel they were witnessing a sudden eruption of politics into the academic world with all the show-peddled drama of a Greek tragedy.

Mr Papandreu's message to the conference of European rectors (CRE) was glaringly honest political perhaps because his real aim was to reach Greek intellectuals through their television. He did not cloak it in diplomatic ploy for the benefit of the visiting rectors.

The agenda for the university was simple: "Peace, freedom, national independence." For him the neutral university was a reactionary institution and the politicized university an honest ideal.

But Mr Papandreu entered two caveats that softened the glare. First he made a distinction between the neutral university (bad) and the



Papandreu

Independent university (good).

"Independence means something entirely different from neutrality. It means independence judgement and values, a notion indissolubly linked with the process of science. The latter means the alienation of scientific judgments from the philosophical and historical foundations that define scientific problems."

Second, he insisted that to reject the traditional university was not to

Research support 'buoyant'

by Jon Turney
Science Correspondent

There is no firm evidence of a fall in total support for university research, in spite of the litany of complaints from academics over the past three years.

This conclusion emerges in a paper being discussed at the British Association for the Advancement of Science today and presented by Mr Ted Butler of the Technical Change Centre. After a very detailed review of information about support for research in universities from different Government sources, he finds there were real increases at least up to 1982/83.

The figures for funding flowing into university research derive from totting up contributions from the University Grants Committee, Government departments and the research councils. If the totals are adjusted using the Committee of Vice-Chancellors and Principals' index of university costs – a specialist indicator of academic inflation – the figures still show that official support for academic research appears to be higher in real terms in 1982/83 than in any of the preceding five years.

Sir Bruce Williams, the director of the Technical Change Centre, supports this interpretation in a second paper, saying the figures are hard to reconcile with claims from universities and the Advisory Board for the Research Councils that real resources for university research have fallen sharply.

Mr Butler concedes that there are many uncertainties in the figures, especially on the cost indexing used which may differ for research. However, he also finds an increase between 1976/77 and 1982/83 in the number of academics doing full-time research, although there has been a significant fall in the numbers of full-time postgraduate students.

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Letters to the editor

Misjudging CERN's achievements

Sir - According to two social scientists from Sussex quoted in your article "Research" (THES, September 7) the productivity of the laboratory has been reduced by the problems of handling "the various national interests involved in CERN".

The article says that over the period of 1969 to 1978 the European Nuclear Research Centre produced fewer sensational discoveries than laboratories in the United States, a fact appreciated in the world particle physics community before Messrs Irvine and Martin appeared on the scene to apply their tediously lengthy effort of hindsight. But these authors remain oblivious to the obvious fact that the quite extraordinary success of the Americans in that decade is due to one machine, the

electron-positron collider (SPEAR) at Stanford. It was supposedly the "right" machine for the physics of the time. CERN, with proton accelerators, had a great success, the discovery of a new form of the weak interaction (the neutral-current), and several other results of outstanding importance which will show the balance to be more nearly even when a serious history of this epoch is written. But Stanford must be given the honours over that period, if science is to be judged like a "Top of the Pops".

Martin and Irvine, having set out on a project to judge CERN, ignore (or do not understand) the obvious and so seek an "explanation" of this difference in performance in terms of management style. If CERN has, in their eyes, performed less well, then its

management must be poor, they argue. What can the matter be? Well, there is a ready answer, they say: American laboratories are run by brilliant autocrats while CERN is an international laboratory languishing under the grey and debilitating influence of committees all accountable to a dozen political masters. A view certainly guaranteed to catch headlines. But anyone who has ever had the slightest acquaintance with the ways CERN's scientific programme is handled knows that there is no such political interference, and Martin and Irvine produce not an iota of evidence to support this bold assertion.

Why do they not blame the occasional lapses from wisdom - retrospectively judged - at American laboratories on the fact that they are national

laboratories? All laboratory management has difficult policy decisions to take and it is the essence of experimental science that the "rightness" of some decisions cannot be known until the experiments are done; but Irvine and Martin do not understand this, they think planning in fundamental science is like that in a car factory: all you have to do is get your market research right.

Thus the omens for the value of their predictions of the future to be released to an impatient public in December are not good. At least a delay in the current publication has saved them red faces over the successes of the CERN W and Z discoveries.

JOHN MULVEY,
Department of Nuclear Physics,
University of Oxford.

Engineering demand

Sir - Bryan Taylor and Elizabeth Taylor (THES, September 7) ask for comments on their forecast of a level A level students of "high achievement" to study electrical engineering in universities in the period 1985-2000.

I would make a number of comments.

● The number of graduates required is doubtful since even a casual review of the relevant advertised part of the labour market reveals high unemployment between qualifications and experience, especially in the technology places.

● Many industrialists at the Confederation of British Industry conference, called to debate skills shortages in technology, were arguing for a simple switch. But Mr Brooke said this could never be a short-term solution, nor could library-based places provide scope for boosting laboratory-based places.

● The Government remains committed to a longer-term change through to the 1990s, but Mr Brooke referred to current negotiations with the Treasury to secure extra funds as the way for an immediate boost of science and technology provision.

● He outlined a series of constraints facing higher education in trying to overcome current bottlenecks, including the need to find more IT teachers, and the need for industry to put out clear signals in terms of salary and promotion prospects that it wants IT specialists.

● He also said one of the main policy Government thrusts would have to be to create a greater pool of school

Arts-science switch 'is not enough'

by Paul Flather

Mr Peter Brooke, under secretary of state for higher education, has confirmed in public for the first time that the Government is having second thoughts about a simple switch in student places from the arts to the sciences.

He told a one-day conference of industrialists, academics, and government officials in London this week that reducing the number of arts places would not in itself release enough funds to pay for the urgently desired increase in science and technology places.

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Lecturers face new pay gap

by David Jobbins

University lecturers face a widening pay differential with their clinical academic colleagues next year - even before their current pay negotiations are completed.

The vice chancellors have decided to pay the full two-stage 6.9 per cent award to clinicians in line with the settlement for National Health Service doctors and dentists.

Although it will cost only 4.6 per cent in the current financial year, the award - 3 per cent backdated to April and 3.9 per cent on November 1 - will significantly raise the base point for the 1985 award and widen further what leaders of the Association of University Teachers regard as an already unacceptable salary gap.

The decision to fund the award to some 2,300 academic clinicians was taken after the Treasury blocked extra cash requested by the universities to finance 80 per cent of the award as in 1982 and 1983.

Taken in advance of the vice-chancellors' annual retreat later this month, at which pay questions are expected to figure largely in the discussions, the decision will increase a clinical professor's salary to £25,962 from November compared with the current non-clinical professional average of £20,300.

In its case for improved pay, the AUT expressed its concern at the way the differential was rapidly widening - from 14 per cent in 1981 to 20 per cent before the latest award to clinicians, which opens up the lead to 28 per cent. A rise of 4.75 per cent, the offer already rejected by the AUT, would still lead to a gap of 22 per cent.

Because of the small numbers involved, the cost to the university system of meeting the extra costs this year are not great. But there are fears that the impact in future years on universities with large concentrations of clinical academics could be serious.

The AUT is pressing for a meeting of Committee A, the first stage of the academics' negotiating machinery in advance of the vice chancellors' retreat which begins on September 22.

Meanwhile, Sir Keith Joseph, Secretary of State for Education and Science, has announced he will not seek to block the 4.6 per cent plus £30 for lecturers at the top of the lowest salary scale.



Students at the last of the Open University summer schools take a break in the tranquil grounds of Westfield College, London. Meanwhile, hundreds of inquiries from next year's hopefuls lie unanswered due to administrative staff shortages. The OU's policy on frozen posts due to its financial squeeze means there is only one part-time member of staff on hand to process the flood of letters.

Peace studies defended as professor goes on the attack

A robust defence of peace studies in higher education - "a subject which our civilization cannot afford not to study" - was mounted this week by Professor James O'Connell, professor of peace studies at Bradford University.

He was giving an opening address to a three-day conference on peace studies, a subject which has provoked criticism and controversy during the past year. The Bradford school set up the conference to mark its first 10 years of undergraduate teaching.

Professor O'Connell, with clear reference to pro-nuclear and right-wing critics, some of whom were in the audience, said there was now acceptance of the study of peace "apart from academics rooted in an unbending status quo and those upset by the belief that peace studies had fallen into the hands of their political opponents."

He pointed out that the main impact of peace studies and its most pervasive influence comes in any case through other academic disciplines, particularly the social sciences of politics, sociology, economics and psychology.

"What peace studies does," he said, "is to take problems of order that are already considered in or touched on

within the disciplines and to deal with these problems in a coordinated way and with a unified focus."

Professor O'Connell then went on to define the main topics in the MA course including concepts of peace, freedom, and justice (philosophy and theology), peace between states and world regions (international relations and economics), peace between races and ethnic groups (politics and sociology), peace between social classes (politics, economics and sociology), and peace between labour and management (industrial relations, sociology and economics).

Peace studies could also be easily introduced as a minor component in a degree or course in politics, sociology, philosophy or theology, as for example at Berkeley, the University of California.

The subject needs "to take as much interest in the balance of weaponry as does an institute of strategic studies and as much interest in the balance of power as an institute of international politics," he said. He conceded that minimal use of force could well prevent inter and greater incidence of war, but commended the study as an essential theme.

Extramural role

Sir - Professor Fordham's cogent analysis (THES, August 31) of what he sees as the future role of university adult educators is weakened by the fact that he does not appear to take full account of the wide variety of conditions in which university adult education is carried out.

For a university which serves a large and perhaps relatively sparsely populated area, the process he advocates - of turning on their heads the functions of full time extramural staff - would seriously endanger links with the local community developed by resident tutors.

These members of the university staff, who are both subject specialists and are already involved in programme development, often provide the only, or a large percentage of, courses taught by university staff in areas distant from the university. If Professor Fordham's prescription is to be followed, ways will need to be found to continue the specialist teaching they provide so that work by university staff can continue to be found well beyond the university campus or its immediate environs.

Moreover, any move to lessen the teaching commitment of full time staff in university extramural departments in favour of research-based reflective action would seriously weaken the base of pragmatic knowledge and experience on which the work of adult educators is to be built.

Yours faithfully,
R. W. AMBLER,
Lecturer in history and warden of the Doughty Centre, Great Crimsby.

Poets cornered

Sir - While I am glad that a critic who makes it so clear that he is totally uninterested in the sort of inquiry in which I have been engaged should find some merit in *The Poet and his Audience*, two inaccuracies in Mr Philip Hobsbaum's review (THES, August 31) call for correction.

His statement that much of my matter "has appeared elsewhere" particularly in *English Literature 1815-1832*, is seriously misleading. It is true that it was my reading of the letters of Shelley for that book which gave me the idea for the present investigation, and of course certain quotations from these letters (as from the letters of Byron) may be found in both books; but the chapters on the two poets in my latest study are recent work, strengthened (as I hope) by a deepened understanding of their writings.

The remark that *The Poet and his Audience* "pairs . . . off" the six poets "to form a set of contrasts" is also incorrect. It is as illuminating to compare Pope and Byron, or Dryden and Tennyson, as to compare Byron and Shelley. My object is not to "pair" the poets who happen to occur in adjacent chapters but to invite my readers to consider some of the ways in which a poem comes into existence at a particular time and in a particular place, as the work of a man writing for a particular audience. This necessarily entails some consideration of what Mr Hobsbaum terms,



Shelley and Byron with careful distaste, "the penumbra of historical background".



as *The Rape of the Lock*, *Don Juan*, and the poems in *The Tower and The Winding Stair*.

While I am flattered to be associated with A. C. Bradley and C. S. Lewis I am not conscious of belonging to any "school of criticism", nor does it worry me that my "methodology" should strike Mr Hobsbaum as "somewhat elusive". In my latest book I have tried to discover how the poets with whom I am concerned were able to write such masterpieces

as *The Rape of the Lock*, *Don Juan*, and the poems in *The Tower and The Winding Stair*. Before he attempts his next review, Mr Hobsbaum would do well to reread *An Essay on Criticism*, with particular reference to lines 255-6.

Yours faithfully,
IAN JACK,
Pembroke College,
Cambridge,
CB2 1RF.

percentage of candidates admitted

$$\left(\sin \left[\frac{\text{mean-grade} - 20.87}{-0.234} \right] \right)^2 \times 100$$

Yours sincerely,
BRYAN TAYLOR,
Planning Officer, Bath University.

Video nasties

Sir - We were baffled by Mallory Wober's piece "Nasty sights and sounds" (THES, August 31). The claim that he "reconsiders the arguments over violent videos" seems nonsense. The new genre of video nasties has stimulated vital issues, legislation and research which are totally ignored in his article. THES readers have a right to expect more than this.

Pending such a feature may we correct two points in Wober's article. First, more than 90 per cent of the media coverage on this issue has been pro-censorship/anti-video nasties. For Wober to suggest that "seven journalists, all male" apparently suffering from psychotic tendencies had "quickly" mounted an attack on censorship and Hill's woefully bad research was a parody of the history. Moreover two of the journalists he named are respectable academics and researchers in this field.

Second, we fail to see the relevance of the media which Wober cites. Soft porn which one may read on some airlines, tape video shows and so on have precious little to do with the serious issue of films and video nasties. As Fraser concludes in his book, *Violence in the Arts*, violence is ideally the cutting edge of ideas and ideologies. It is a shame to see all blunted beneath Wober's hammer.

GUY CUMBERBATCH,
Director, communications research,
Aston University.

The danger of a common validating body is first, that it will delay change and stifle initiative in a period when change is drastically needed and, second, that it will take primary responsibility from the very people who should be exercising it, the teachers and their institutions. There will always be mistakes made, whatever the responsibility of institutions for their courses is the best use of maximizing good practice.

Yours faithfully,
P. HAVARD-WILLIAMS,
Head of library and information studies,
Loughborough University.

Yours faithfully,
MARTIN BARKER,
Senior lecturer, communications studies,
Bristol Polytechnic.

Valid warning

Sir - Mr Raymond R. Harris, in his letter on a common validating body (THES, August 24) suggests that it is my opposition to the idea, there is a touch of nervousness. Not at all; my letter was written out of fear - fear that bureaucracy will supplant scholarship (for the sake of bureaucracy). While the Council for National Academic Awards was necessary in the 1960s and 1970s to raise and set standards, polytechnics and other institutions have now adequate experience of setting their own standards.

The findings of a new survey of language teaching in adult education, and to be the first of its kind showed an overall drop-out rate of 16 per cent among all language students between 1983 and spring 1984.

Mr Alan Moys, deputy director of the Centre for Information on Language Teaching and Research, which put on the conference at Nottingham University, said the relatively high drop-out rate reflected both the "shoe-string approach to resources" and the "inadequate teacher training provision".

Mr Andrew Fairbairn, the former chief education officer of Leicestershire, told the conference that he would like to see a new body set up to coordinate all language resources to adult education without ensuring teachers were properly qualified. Leicestershire is

one of few education authorities insisting on this requirement.

The survey, carried out for CILT by Mr Philip Handley of Brighton Polytechnic, found an estimated 100,000 people looking to adult education courses to learn languages - a major chunk of the whole adult market.

Between the autumn term last year and the spring term this year 2,153 students dropped out of beginners' French classes (20 per cent of the total), 1,642 dropped out of beginners' German classes (23 per cent), 1,568 out of Spanish classes (25 per cent), and 1,877 out of Italian classes (28 per cent).

There were smaller but still significant drop-out rates at the intermediate and advanced levels in these four languages, the most popular: for example, 17 and 18 per cent in French, and 18 and 11 per cent in German.

Overall some 5.5 per cent of classes were closed between the two terms, with average class sizes falling in

Concern over adult language drop-out rate

Many mature students drop out of language courses because too many teachers in adult education have not been fully trained and because courses are often poorly described, a conference of adult educators was told last week.

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New bid to save Scotland's action plan

A fresh attempt was made this week to salvage the Government's action plan for 16 to 18-year-olds in Scotland, following Scottish Office disapproval of a previous compromise.

The scheme's two validating bodies, the Scottish Business Education and Technical Education Councils, had drawn up a plan postponing the involvement of private agencies for two years, to save off a union boycott.

But the Government objected to the compromise, first because it prevented links between the public and private sectors and second because SCOTBEC and SCOTEC are due to merge

into a new body next year, and should not be making policy beyond their life span.

This week, the two bodies accepted a nine-point resolution which states that over the next two years they are prepared to discuss individual applications from the private sector, but stresses that their validation and moderation work will be concentrated in schools, colleges and skills centres.

The councils have also decided that since no firm date has been set for their merger, decisions for 1985/86 could be made with the status of a recommendation to the new body.

Officials of the Scottish Further Education Association and the further education section of the Educational Institute of Scotland were due to meet this week to discuss the new proposals.

Mr Graham Allison, general secretary of the SFEA, said there was considerable concern over the threat to lecturers' jobs from privatization. The SFEA has resolved that unless there were guarantees that no benefit would accrue to private agencies through the action plan, members would be recommended to boycott the scheme.

No evidence of fall in research support

Results from the survey of psychology by Professor Mark Haggard of Nottingham University suggest that more information can increase the confusion about how much money is really going into one scientific field. He found that 40 universities replying to a questionnaire claimed to have received £400,000 more in grants for psychology from the Science and Engineering Research Council in 1982/83 than the council said it had given out.

Official support for academic research in relation to universities' recurrent income (£m)

Universities' total recurrent income	Total official support for research	Total recurrent income "1983 prices"	Official support "1983 prices"
a	b	c	d
1977/78	882.0	353.1	1621.3
1978/79	1003.4	403.0	1687.2
1979/80	1268.8	481.8	1827.7
1980/81	1563.0	610.1	1770.1
1981/82	1899.7	677.9	1788.2
1982/83	1828.2	733.8	1828.2

Mr Moys said all teachers should be given some kind of induction training and follow Leicestershire's lead, and courses should be more fully described. There was also widespread support for more local networks and pressure groups of adult educators to fight their corner, and for local authority language advisers to be involved at the adult as well as school level.

Yours faithfully,
R. C. FOX,
Kenya University College,
Kenya.

Letters for publication should arrive by Tuesday morning. They should be as short as possible and written on one side of the paper. The editor reserves the right to cut or amend them, if necessary.

DON'S
DIARY

TUESDAY WEEK 1

America. When I'm at a conference I usually spend my time attending to the conference programme, but for some reason I find I need a break, so I leave the International Society for Music Education at mid-morning to visit the downtown community college in Eugene, Oregon. It is in a four-storey converted multiple store in a prime position on the corner of a pedestrianised shopping precinct and compared with the adult education provision I have seen in England it is overstocked and under-used. How many of our adult education buildings have 14 computer terminals in one room?

The canteen in the basement is run by people from the local home for mentally handicapped, with the help of a supervisor appointed by the adult education committee, and other mentally handicapped people are employed on the first floor sorting stationery and office paper work.

The subjects offered are similar to those available in England with slightly more emphasis on training for employment in office work. The coordinator who takes me around is keen to exchange experiences and we discuss my paper which I have to read to the conference on Thursday. She finds it hard to believe that adult education is not fully funded by our government, as she thought all English education was free.

TUESDAY, WEEK 2

Thank goodness the cable cars of San Francisco have been restored. It would have been disappointing to visit this city and not take a ride up and down the roller-coaster streets standing on the back platform of a rattling car.

The Democratic convention is in full swing, as well as a strike by some of the employees of May's department store, so having negotiated the protest rally of strikers in Union Square it was time to walk through the hundreds of demonstrators representing every imaginable anti-group who were gathering to greet the delegates as they left the convention hall. With so many police, demonstrators, press, delegates and others wearing one or more identity labels, where were the ordinary citizens? And how many factories are there in America making all those flags?

TUESDAY, WEEK 3

Ecuador. In Quito, four taxi drivers are not too sure where the tourist office is, so I arrive at the end of the wrong road. Continuous questioning leads me to the office where there are no maps of the city, no tours can be arranged, in fact no help at all. Postcards are difficult to find, like-wise stamps, but eventually the two come together in the Hilton hotel where I pay for them in local currency of sugars (*sucres*). Lots of little tricycles circulate the streets and parks with bells tinkling, selling ice-cream, but to me that is a forbidden luxury as I haven't had any of the recommended vaccinations, so can't risk eating anything that might upset me.

It seems to be possible to buy most things on the streets. One man is walking along selling 12 mops and brushes with long handles, another car aerials and headlamps, yet another single cigarettes and there are dozens of boys eager to clean my shoes. Beggings is done very quietly, almost apologetically, by children and old women.

TUESDAY, WEEK 4

Peru. The Peruvian flag is a red-white-red. It was very much in evidence in Lima on Saturday, Independence Day, and there are still

many flying here in Cusco. It is obligatory for everyone to fly the flag on two specified days of the year, and the police are very vigilant, so those who fail to show their patriotism are fined.

There is a wealth of history here, and while some is being restored and guarded, there are buildings and articles which are being allowed to decay. The church of San Blas boasts an ornate carved wooden pulpit, thick with dust and cobwebs, but near the door is a madonnin surrounded by pieces of mirror in a frame. (The conquering Spaniards attracted the Indians into churches by letting them see themselves in mirrors.) Behind broken pieces of these mirrors are fragments of very old manuscript. Why can't someone realize the value of the treasures that are lying neglected?

The South American back is made for carrying. It is usually the women who have the brightly-coloured blankets across their shoulders containing the shopping - vegetables, fruit, grain, clothing, snuggles and a baby somewhere in the middle of it. The babies must be made of dough; they seem to fit around all shapes and sizes of bundles, with just their faces peeping out at the world.

TUESDAY, WEEK 5

Puno. It isn't any good going to South America if you expect everything to be on time, cannot accept that poverty exists in greater volume than riches, and look for high standards of hygiene. That was why the Canadian I chatted to was most unhappy when he thought back to the holidays he'd spent in Germany and Switzerland. But how interesting to order coffee with milk in one's hotel, watch the waiter's face while he slowly mounds the word *leche*, as if it is an exotic fruit to be slowly over the tongue, wait 15 minutes, then be told there is no milk but there might be some tomorrow. And two candles with two boxes of matches in the bedroom are more reassuring than the one provided in other hotels. But the story of this hotel requires a further telling - especially as I shouldn't have been there, but somewhere else.

TUESDAY, WEEK 6

Brazil. Rio de Janeiro is beautiful - everyone says so. The taxi drivers point out places of interest as we pass: shop owners stand in doorways and when I stop to look in a window they ask where I am from and am I enjoying Rio. I have to say yes, even though I am wishing they spoke Spanish instead of Portuguese. Unfortunately the weather is cold (for Rio) and the beaches are deserted, so my dream of sitting on the sand at Copacabana and Panama is not to be realized. Sugar Loaf mountain and the Christ statue on Corcovado are both hidden in cloud, but the scenes in the street are constantly interesting.

Sophistication and necessity are very close in Rio. In front of one of the many shops in Ipanema specializing in Brazilian jewels there is a man sitting on the pavement mending saucepans, while people push around him to get a closer look at the emeralds and diamonds. In a fruit and vegetable market elegant women pushing miniature trolleys are loading them with tropical fruits, while one ragged child is trying to sell two strings of garlic.

TUESDAY, WEEK 7

On a catamaran going up the Amazon. Temperature 98°, humidity 85 per cent - bliss! Nothing to do but eat, swim and watch the jungle pass. Until there is a visit to the town of Parícut. Of the 40,000 population, 19,000 are of school age - the highest percentage of school children in the whole of Brazil. No beggars, no visible signs of poverty, but lots of hammocks for sale and a store of telling Singer sewing machines and hundreds of bales of cloth.

Brazilian coffee is the best in South America - and London seems such a long way away.

Anne Dunn

The author is head of Streatham area and of the department of music in Streatham and Tooting Adult Education Institute, south London.

SDP pledge on places

by Biddy Passmore

Social democrats, at their Assembly in Buxton, this week voted to promise a place in higher education to all young people denied their chance by Government cuts.

But Mrs Anne Sofer, the party's education spokeswoman, stressed that the SDP's top priority should remain 16 to 19-year-olds and adults who were now getting no education or training at all. "We must take a tough stand on priorities," he said. "We must not hang on to any particular taboos or knee-jerk reactions."

She was speaking in support of a long motion which pledged the SDP not only to make good the cuts of the past three years but also to reduce the Conservative policy of reducing education spending in line with falling rolls. The resources thus "released" should be used to increase provision for the under-fives and over 16s, keep down class sizes, invest in mathematical and technical skills to meet the demands of the new technologies, and create an integrated system of education and training, it said.

Mrs Fiona Beckett of Hertfordshire, who moved the motion, said the SDP would not only improve but change the education system. Mrs Thatcher's government had already cut £800m and the future looked "a great deal bleaker", with further cuts of £330m planned. But people wouldn't get the message from the Labour Party either, she said. "Money, yes, but no real change; they would spend your money

putting the clock back to 1979". Moving the amendment on a higher education pledge, Mrs Hilary Long of Bristol gave an unusually graphic description of the plight of the bulge generation.

Mrs Thatcher was "a spartan lady," she said, "who put her babies on the hillside to leave them to the vagaries and rude winds of the academic climate to decide who shall be the A graders and who shall die in order to construct her meritocracy and her master race". Many of those young people would grow up to be disappointed and embittered adults.

The SDP students were disappointed that a move to get student loans rejected, although by the conference was defeated. Mr Andrew Dowler, speaking for the students, moved an amendment attacking a loan scheme recently put forward by the vice chancellors' committee. He said the introduction of loans would lead to huge costs and bureaucracy and added, to loud applause, that loans would "undermine the SDP principle of equality of opportunity to enter higher education".

The conference should reaffirm its commitment to a mandatory education benefit for all in further and higher education, he said.

But Mrs Sofer said the party's education policy group had not yet seen the vice chancellors' scheme and the SDP could not afford to close its mind to new proposals. The amend-

ment was defeated.

A new policy document on post-examinations published during the assembly criticized the AS level as "uncertain of execution, a nasty little mistle", and still likely to leave the education of A level students in a narrow.

Instead, the party advocates a complete reform of public examinations with a radical change in the curriculum, a prerequisite. This would include a common core, on top of which students wanting to enter higher education would take additional studies in at least five broad areas. This would be loaded towards their intended degree studies, with some major and some minor subjects, as in the International Baccalaureate.

The SDP's proposal would be in opposition from some quarters, higher education, notably science and medical faculties, the document notes, as the amount of detail studied before university entry would be less than under present arrangements.

But it thinks this problem has been greatly exaggerated, as the success of students demonstrates. And the party suggests the problem might be solved by measures such as adjusting first degree courses or by pre-university assigned work. TES.

Education Matters No. 2, Part 1 Exams, 60p for the SDP, 4 Condy Street, London, SW1.

Southtek's costs
provoke open debate

by Felicity Jones

The "friendly" multi-media open learning system Southtek, which was launched last week, has provoked some scepticism.

The high-tech packages of workbooks, cassettes, videos and personal experiment kits in microelectronics and advanced engineering developed by 14 colleges, local authorities and companies in the south-east of England with Manpower Services Commission money is said to have companies like British Aerospace and Marconi queuing up.

But Professor Jean Millar, Brunel University's director of continuing education, thinks that several thousand of the packages, retailing at £40 each, will need to be sold to break even.

"It reminds me of when we were developing like Southtek are just the flavour of the month of fashion next year," she said. "I think that £1.7m is an awful lot of money for 60 two-day courses. It sounds like quite an expensive programme which will only be justified if it is well selected and stands the test of time."

The test would come in how well the

students did without close supervision since it is the teaching costs which tend to be the most expensive.

Mr Clive Hewitt, Southtek's director on a secondment from Brunel Polytechnic, said that it had cost £18,000 to develop the 16-hour packages which had been costing over a £1,000 per study hour.

"This leaves quite a large an outstanding for setting up the project which is meant to be self-financing from next year," Professor Millar added.

Southtek plans to appoint commercial sales staff to sell the learning packages direct to companies and college staff who will service the support units around the country will be paid from the registration fee. The fee, which amounts to £250 a study hour, is considered high and was queried by the Open University's continuing education department. Mr Paul Bowen, the secretary, said that most of their courses cost the student 80p an hour.

"Even the more expensive courses like robotics and business management might cost £3 but this includes extensive counselling, an exam and a residential school," he said.

Joining forces over YTS

Three youth organizations have joined forces to demand major improvements in the Youth Training Scheme when they meet Manpower Services Commission officials later this month.

Unemployment among trainees who complete their courses, high drop-out rates, penalizing of trainees who terminate their training through the supplementary benefits system, and the scheme's safety record are among the concerns of the organizations, the National Union of Students, the British Youth Council, and Youth Aid.

They want Government help for trainees unable to find work, an increase in the £26.25 allowance to at least £30 a week, more variation in

types of scheme, an end to sex and race discrimination, better monitoring of schemes with reform or closure of alleged "cowboy" operations and removal of barriers to political education.

Mr Phil Woolas, president of the NUS, said: "The excuse for not doing more has often been given as the amount of resources available, but it is our view that this is an excuse for some of the oppression of people forced through the YTS."

Mr Paul Lewis, director of Youth Aid, said: "Changes are clearly needed to make the scheme more attractive to young people and to stimulate the interest the Government would like."

The historic library of the Medical Society of London has also been saved for British scholars, this time by the Wellcome Trust and five other charities.

They raised more than £750,000 to buy the society's 110,000 rare medical books and manuscripts, some going back to the fourteenth century. The library, which was in danger of dispersal overseas, will now become part of the much larger Wellcome collection.

Oxford awards more firsts

by Paul Flather

Standards at Oxford University are rising with more students being awarded firsts and less room left for the aristocratic sportsmen of old who used to receive a "gentleman's third".

According to new research carried out by a senior don for *The THES*, 13.7 per cent of all students graduating from Oxford this summer were awarded firsts - twice the proportion who won the coveted prize 20 years ago.

More striking still is the decline of the third class degree, which this year accounted for just 10.5 per cent of all Oxford degrees, compared to a third of students in the 1960s, and another 3 per cent who were awarded fourths.

The Norrington table, a league of academic results based on three points for first, two for a second, and one for a third, is very closely studied by academics, students, and school-teachers alike, while students' conceptions of the tough labour market now work harder at Oxford, according to admissions tutors.

The Norrington table, however, dis-

guises the performance of colleges in individual subjects - the key most applicants are interested in - and the new research confirms wide variations in college success rates in different subjects over the past 12 years.

The research, applying the Norrington scoring system to subjects from 1973 to 1984, shows for example in engineering that St John's College, top of the whole Norrington table this year, also came out top in engineering this year, while Balliol has been top or joint top in four of the last 12 years, and Oriel has been top twice.

In modern history, Exeter were top this year but Merton are the runaway leaders coming top four times, while in law St John's were best this year but five colleges, University, Magdalen, Keble, Hertford and Worcester, have all been top twice.

In English, Worcester did best this year but University comes out best overall coming top three times, while Corpus Christi dominates classics coming top this year for the fifth time, followed by Magdalen top three times, and Trinity and Balliol twice each. In modern languages Worcester was top this year for the second time, but New College has come top three times, with no other college coming top more than once.

Search launched for automation director

The Science and Engineering Research Council has launched a new directorate to advance industrial automation - but has yet to find a suitable director.

The programme for the Application of Computers to Manufacturing Engineering scheme (ACME) will be worth £11m over the next five years. The SERC advertised for a director earlier this year - at £24,000 a year - but no appointment has been made. The council has decided to get ACME under way without the new director, and hope that a firm of headhunters can find the right person by the end of the year.

The ACME scheme unites existing SERC programmes in computer-aided engineering, robotics and production engineering. It will be part of a general move to extend automation from mass production lines to small batch en-

gineering, which needs more sophisticated robots with flexible programs. The directorate will work along the same lines as the council's earlier robotics work, with grants going to university or polytechnic groups who have strong links with companies. The directorate will want to discuss plans for grant applications before they are formally submitted.

Their SERC wants the ACME-backed projects to complement the much larger Alvey programme which is geared to wider development of new computer techniques. ACME will start by inviting applications for research in six areas. They include problems of managing islands of automation in old-style factories, designing products for automated manufacture and information networks for factories using robots to make a wide range of components.

Meanwhile, Dr Smith will answer to a joint management committee formed with the Department of Trade and Industry, which will begin work in September. He felt it was less important to have a director in post at the beginning of the programme than in one or two years' time. Then the council would need to become more selective about which projects to develop further.

Dr Peter Smith, who ran the SERC's robotics programme, will administer ACME until a director is found. The council has persuaded the Department of Education and Science to raise the permitted salary for the post to £30,000, but Dr Smith does not believe money is the only problem. "It's a difficult job to fill because we're asking the near impossible - someone with a real understanding of industry and academia," he said.

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Unions pledge to fight
threat to tenure

by David Jobbins

Trade unions have pledged resistance to the threat by ministers to legislate to remove tenure from the universities.

A resolution attacking the Government's intention to put commissioners into the universities to remove protection from dismissal on grounds of redundancy or financial exigency from all future academic appointments was overwhelmingly adopted at last week's Trades Union Congress in Brighton.

The motion proposed by the Association of University Teachers, described the plan as an "unacceptable interference in freely negotiated terms of employment" and "a direct political attack".

Dr Ron Emmanuel, the AUT's president, told congress: "With these changes the Government would be able to threaten individual universities or individual departments, or individual teachers that if they carry out research or teaching the Government does not like, funding will be withdrawn and the staff will be sacked."

"It is all part of the process of increasing fear in our society - fear to criticize, fear to speak out for what one believes."

Dr Emmanuel pointed to the Government's onslaught on the Open University as further evidence of its determination to stifle criticism. This was endorsed by Mr Ray Lowther, of the Transport Salaried Staffs Association.

Scottish figures show ups and downs

There has been a drop in the number of Scottish students taking full-time non-advanced further education courses following the introduction of the Youth Training Scheme.

This is revealed in the latest Scottish Education Department statistical bulletin, showing enrolments in vocational further education in 1983.

Between 1981 and 1982 there was an increase of more than a quarter in the



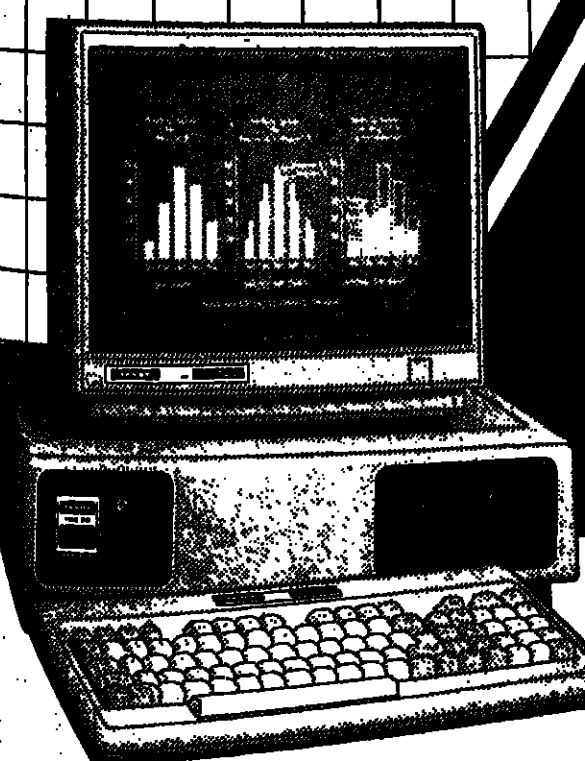
Ron Emmanuel

number of students taking full-time non-advanced courses, but this dropped by 5 per cent in 1983, when the YTS was introduced. This figure is matched by a dramatic 50 per cent increase in numbers taking block release courses, which are open to school-leavers on the YTS.

The bulletin also shows that the total number of students in vocational further education rose to nearly 188,000, an increase of 10 per cent.

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Steering clear of the silly season

The newspaper's silly season traditionally ends with two grand meetings, the annual gatherings of the Trades Union Congress and the British Association for the Advancement of Science.

The BA's aim is to ensure that it is outside the season, not part of it. This is hard for a body, over 150 years old, whose original role has been usurped by a host of specialist societies. The BA is no longer the parliament of science.

Dr David Morley, the association's secretary, says he would like the meeting to be a festival of science, rather than a conference. But the breadth this implies is itself a problem. The meeting, and the BA itself, needs a focus. This must not be too controversial to deter the two or three thousand people who annually descend on a selected university - this year the self-contained 1960s campus

of East Anglia - to choose from 200 papers on everything from rural suburbanization in Norfolk to X-ray astronomy. The association has always been more concerned with securing support for science than examining problems which it may help create.

The current solution is to try to carve out a niche in the fashionable field of technology transfer. The association formed a new science and industry committee last year, and the Norwiche meeting saw the launch of a glossy magazine, *Link Up*, to promote contacts between academics and companies. Sir Alastair Pilkington, this year's president of the association, hopes the magazine - which will be

sent free to managing directors and academics - will make each side more aware of the other's wants.

"Success with *Link Up* would be for someone working on a research project in a university to read of a need in a company, to realize his research work is relevant and offer help", he said. So the first issue carries articles like "How microbes can help your business", and pieces on interferon, super computers, and women engineers, capped by a note of welcome from the Prime Minister.

However, this does not make the annual meeting an arena for industrial problems. There were only around 30 industrial speakers out of this year's

200. And another innovation of last year's meeting, the specialist Mason conferences, named after the 1983 president Sir John Mason, fell flat this time round. At Sussex last August, 11 learned societies were persuaded to hold meetings alongside the general BA session. There are only two this year, although Dr Morley subscribes this to lack of advance planning and is sure there will be more in 1985.

Yet a third new initiative has also made faltering progress so far. The BA's "science audit" a plan to try to assess national support for science, has drawn little enthusiasm from the scientific community. Dr Morley finds his scientific members are not interested

in policy.

However, the general business of BA meetings still commands an audience, not least from the press. And universities still seem happy to play host to the association's travelling circus - Bristol and Belfast are already booked for the next two years. In fact, the universities often provide a hefty subsidy for the meeting, at least according to Liverpool's accounting for 1982. Last year, Sussex University determined to break even and did so after some tough talking.

The return to the university is good publicity and often warmer relations with local councils. Negotiation with the local council last year gave Sussex a chance to put out how much money the university contributes to the local economy. The Liverpool meeting helped reestablish the city's image in the wake of the Toxteth riots.



Speakers included Mr Nigel Calder (left) and Lord Young.

Call for ambitious journey into space

Britain needs a new space agency to secure the country's future in space science, and its powerful new applications, Sir Robert Boyd, former director of University College London's Mullard space science laboratory, told the conference.

Such an agency was necessary because British involvement in space science and technology needed strategic coordination which was impossible if responsibility was split between different research councils and Government departments, he said.

In his presidential address to the association's physics section, Sir Robert reviewed the new techniques for observing the Earth from space, which showed great academic as well as industrial promise. These included satellites for crop and resource monitoring, meteorology, oceanography, climatology and geophysics.

All of these were far maturing towards application, but support for British domestic space science had fallen by a factor of four in the last decade. We now needed new money to exploit the coming age of space science, Sir Robert said.

In particular, the country could not afford artificial divisions in administration, like the split between the Science and Engineering Research Council and the Natural Environment Research Council in study from space of

'Researcher, know thyself'

University science lecturers will do research into anything except their own teaching, according to Professor Malcolm Frazer of the school of chemical sciences at the University of East Anglia. He suggested one answer would be to divert part of the research budget into studies of improved science teaching.

In his presidential address to the education section, he said science teaching in higher education needed a curriculum review as badly as secondary science.

University teachers argued that nothing could be lost from the existing curriculum without dropping standards. But Professor Frazer found this ridiculous because science was changing so fast.

Crumbs of hope scattered for the gentle scientist

Just because this is 1984 doesn't mean George Orwell was wrong. Science writer Nigel Calder looked to the vision of a 1948 pessimist for a lesson in how to think about the future, accepting the possibility of deep changes in the social fabric.

Unlike most pundits, he could back his forecast by looking back at earlier predictions, which Calder commissioned from distinguished scientists 20 years ago.

Overall, the scientists' predictions were quite good, because their general assumption that new technology would slot into a very similar society had proven right. But Calder argued this would soon change. Orwell's view that the world was in for drastic change would be true in the long run.

In contrast with 1964, Calder felt, he could not now invite 100 experts to look ahead to the twenty first century and ask them to assume no big changes. The power of the technologies we now had to deal with weighed against their gradual integration.

Mr Calder argued for trying to grasp the scale of possible change through shorthand pictures of the logical outcome of different strands in current technology. Examples included the Santa Claus machine, the end point of automation. It would cut costs and make any object you choose. There

He had a stern answer for those who suggested this conclusion was wildly at variance with political reality. Consider the alternatives. If we did not start trying to think our way through imminent dangers, science and technology began to look more and more immoral. They simply raised the stakes in the competition between nation states.

Why physics is bottom of the popularity poll

Physics comes bottom of the press popularity poll at BA meetings. This disturbing news for particle hunters distilling the outcome of the British Inquiry into membership of the European physics laboratory in Geneva (CERN) came from Professor Jack Meadows of Leicester University.

Professor Meadows told the BA's physics section that analysis of reports from the 1980 meeting in Salford bore out the more general observation that physics figures much less often in the press than biology, medicine, engineering or technology.

But he pointed out that the media picture of physicists had not always been as bleak as this. Before the last war, there was more popular reporting of physics, partly because it then seemed more usual to write about the physics of everyday objects.

A second reason for the decline in press coverage, Professor Meadows suggested, was that contemporary physics was much more complex conceptually and harder to relate to human interest. This is one reason why there are few votes in retaining membership of CERN.

Scientists as well as journalists have problems putting the details of current physics across. Professor John Kingman, chairman of the Science and Engineering Research Council, has urged particle physicists to work at explaining the frontiers of the subject to lay audiences.

His council colleague, Professor Sir Michael Aitken, had a go in the BA's maths section, looking at the relationship between particle physics and geometry. But he took refuge in history. On the current theories attempting to unify the four fundamental forces recognized by physics, all he said was, "this is the present frontier of the subject where all the activity is taking place. It is too technical to describe here." It was a clear demonstration of the problem Meadows identified.

PARTY LINE

Just look what we're missing...

Mrs Feinstein has a colourful way with words, admirably displayed in her welcome to those of us who attended the Democratic Party convention in San Francisco: "Welcome to this great city on the great Pacific Ocean!"

As mayor of San Francisco, Mrs Feinstein was almost the Democrats' vice presidential candidate. But whereas Mrs Ferraro has three children and one husband, Mrs Feinstein has had three husbands and one child. On the other hand - who knows - her finances might have been in better order.

A consummate politician, Mrs Feinstein is one of the leading exponents of the great Pacific basin concept. This is the belief that the centre of gravity of the free world has moved from mid-Atlantic to the great Pacific basin.

Her economic and demographic statistics are rather impressive. But the nations of the far east have cornered 84 per cent of the mounting exports to the United States as the dollar has strengthened over the last four years. This is probably the single most important factor why the nations of western Europe have

not so far gained appreciably from the American-led world recovery.

Most Americans, though, feel more comfortable with Europe. And south-east Asia was, after all, the swamp into which America sank in the 1960s.

As for the president, it is said that even when relaxing he plays the part of a man relaxing. When he remembers the part of the man who stands up for America, Californian though he is, he too is pro-European.

Nevertheless, the relative decline of the western European compared with the far east economies is marked. In 10 years they have grown from less than half of our gross national product to two thirds. Whereas they coped with the latest world recession with hardly a pause - and America is pulling out like an express train -

our recovery in Europe is at a snail's pace.

In Britain, of course, we are almost too accustomed to contemplating decline. We have a certain resigned air. Although the United States has acute economic problems in those old industrial states which comprise the rust belt, the American economy has largely thrown off the industrial past and has become the leader of the new industrial revolution based on information technology. The best we could do was an information technology year - remember it?

While the American economy has been churning out new jobs at a phenomenal pace, in the countries of western Europe the jobs lost in the decaying traditional heavy industries have well exceeded jobs gained in the modern industrial and service sectors. Here the burden of

supporting unproductive workers has been transferred from employers to the government, which translates the burden into higher taxes or public deficits.

We never miss a chance to blame the Reagan administration for our economic woes, yet the American economy has lower inflation, faster growth and lower unemployment than we do. Does our problem lie in our too traditional mentality and our ossified institutions? It hardly looks as if it rests in different economic management techniques.

Relatively we have an overblown government machine, an extraordinary degree of nationalized industry and higher taxes. Our unions are that much more inflexible and the regulations churched out by our bureaucracy that much more restrictive. We are increasingly inward looking, unenterprising and

conservative (note the small c). Earlier in the year, the Wall Street Journal analysed a special business survey as evidence of "the decline of Europe as a source of technology leadership". The survey frankly stated that no European country any longer ranks as the leading source in any technological area.

In Britain we have a long and undistinguished list of prestige schemes, supposedly at the cutting edge of high technology. Concorde, System X, the advanced gas-cooled reactor - which cut no ice in the world marketplace, which are over-engineered, over-priced, unexportable and ultimately charged to the taxpayer. No government has been much good at picking winners. We may snipe at the showbiz of American politics and the calibre of some of its actors, but the country is so vibrant, it rejuvenates the spirit and makes one angry at what we are missing.

Keith Hampson

The author is Conservative MP for Leeds North West.

David Jobbins reports from the Federation of Conservative Students

Tory students switch tactics

by David Jobbins

Conservative students this week claimed party leaders' backing for their campaign to make membership of the National Union of Students voluntary.

A compromise formula replacing the old and internally divisive policy of smashing the NUS was adopted overwhelmingly at the organization's half-yearly council in Edinburgh at the weekend.

The new policy, under which the FCS would press for students to be allowed to opt into the NUS rather than being deemed to be members, means that Conservative students will attend future NUS conferences to press for voluntary membership. They will stand in elections but will not take any seats that they win.

Mr John Selwyn Gummer, the party chairman, who met FCS leaders last week, was said by Mr Mark MacGregor, the FCS vice chairman, to support the move. At Easter Mr Gummer antagonized many FCS right-wingers by advising the federation to fight within the NUS rather than seek its destruction.

Mr Marc Henri Glendening, the FCS chairman, told the council: "We have answered some of Mr Gummer's challenges to come up with a new and positive policy and I believe we have done this." The policy, which was intensely debated, was eventually carried by 108 votes to 17. The minority represented the bulk of the so-called party faction which until Easter continued the organization.

Edinburgh, the heart of the libertarian homeland, saw FCS policies take a hard turn to the right. They took the first steps towards abolishing the office of life patron, currently held by one of the

right's principle figures of hatred, Mr Edward Heath, former Prime Minister. The proposal received the required two-thirds majority but must be confirmed by the federation's annual conference next spring.

Delegates went on to vote for the privatization of the universities. Stirling was proposed as a pilot study for the introduction of the free market economy into higher education.

The conference called for the abolition of the University Grants Committee and the introduction of a full student loans scheme. Both were intended to increase the efficiency and responsiveness of the system through open competition. Mr Glendening said taxpayers should not have to fund universities and that the proposals would free universities financially and academically from the Government.

"They will have to survive on their own merits in the market place," he said. Finally, and without debate because of lack of time, they called for full restoration of sporting links with South Africa. Mr Malcolm Rifkind, foreign office minister of state, was hissed and booed when, addressing the conference later, he said: "There is no justification for going back on the Gleneagles agreement at this stage."

The only link in the unity of the right was over Hongkong, when opponents of immigration to the UK successfully threw out a proposal that any Hongkong Chinese who "wish to flee from Communist tyranny" should be allowed to settle in Britain.

Perhaps because the right was so strongly in the ascendancy there were few of the usual scenes which have dogged the FCS conferences in previous years. The organization's permanent secretary, Mr Tim Cowell,



Conservative student leaders (left to right): Marc Henri Glendening, chairman; Mark MacGregor, senior vice-chairman; and Tim Cowell, permanent secretary and the party's assistant director (youth).

appealed to delegates to remove badges bearing the slogan "Smash Scargill" after a pre-conference altercation between Conservative students and members of the construction workers' union UCATT, who were sharing Edinburgh University's conference facilities.

There were no further incidents, largely because the construction work-

ers made a point of keeping out of the students' way. A UCATT national officer present when FCS members distributed material supporting the Angolan anti-Marxist guerrilla movement UNITA, said later: "I didn't even know they were Conservatives. Neither Rab Butler nor Harold Macmillan would have recognized them either."

Beware of 'cosmetic changes'

Transition in higher education institutions must occur, but the danger was that only marginal or cosmetic changes would take place, Dr George Tolley told the conference.

Institutions in transition should be marked by responsiveness, flexibility and openness, as opposed to the resistance, autonomy and authority characterizing traditional institutions, said Dr Tolley, former principal of Sheffield City Polytechnic and now head of the Manpower Services Commission's quality unit.

Institutions had to change because of developments taking place in technology and society, pressure of the increase in knowledge, the demand for public accountability, and the need for greater cost-effectiveness.

But he posed six questionable areas for institutions in transition: the criteria for students' selection; barriers to choice and progression; the cooperation between institutions; the structures for external liaison including with employers; the contribution to the local community; and the support for staff development.

Each area was faced by an existing "tyranny": the tyranny of "standards"; of departmental strength; of institutional pecking order; of leading professionalisms unsympathetic to employers; of desire for tenure - either real as in universities or by convention as in the public sector.

Professor James Guthrie, professor of education at the University of California, Berkeley, gave an account of the recent explosive growth of the public sector higher education in the United States. He said that the country had realized for the first time that the economic well-being and ability to compete in the market place was tied to the education system.

Higher education had expanded, diversified and taken more risks to respond to this, he said. It had broken "the law of the thin line"

Karen Gold on the first Higher Education International conference

Response to industry criticized

Higher education is not responding to industry's recruitment and innovation needs and educationalists hostile to industry, said Mr Kenneth Durham, chairman of Unilever at the conference.

The conference, held in York, aimed to follow up some of the conclusions of the Council of Europe's 1983 U-2000 conference. Its main themes were the need in Europe for the rapid establishment of systems of mass higher education, and aspects of research and technology transfer.

"As a group, educationists do not understand the process by which wealth is created and a few of them seem actively opposed to the idea of profit and free enterprise. The education system seems inimical to industry, and the grasp of the role or even the meaning of innovation is entirely feeble," Mr Durham said.

Part of the reason why Britain had not kept pace with other countries was fear of innovation and change, he said. But innovation did not mean scientific discoveries in laboratories. "I think many believe much gold lies in the laboratories of higher education institutions waiting to be discovered by industrialists. They are not alone in



Mr Durham scorned "idiotic myth"

that belief. It is held by the government too. Mrs Thatcher held a seminar at which I heard minister after minister get up and perpetuate this idiotic myth."

"But innovation is not just the process of scientific discovery. It is the commercial exploitation of a discovery from whatever source... technology

is only one element: technical people not exposed to the challenge of business and the market place can produce some quite dramatic disasters."

The creation of the new universities and polytechnics to produce students geared towards industry had been a disappointment, he said. Most of them had rushed towards the Oxbridge model, while the apathy towards business still ran deep.

"You have to examine the balance between the demands in the system (for individual satisfaction, the preservation of culture) and ask yourselves whether the balance reflects the importance of industry in our lives," he said. "Industry provides the resources by which the rest is met. You have to ask yourselves whether a no-growth society would be a more humane, a more tolerant, even a more comfortable society."

But he did not believe transferring 10 per cent of higher education resources from arts to science would help since the cost of engineering students was so much higher than arts students. Nor did he think collaboration with the Manpower Services Commission showed commitment to industry.

British research 'too segregated'

There was a real danger that higher education institutions would be financially pressured into activity in which they would not be very productive, Sir Bruce Williams, director of the Technical Change Centre, told the conference.

Speaking on technology transfer, Sir Bruce said that he did not think the British research councils were equipped to pick out applied research in universities and polytechnics which was likely to produce results of great industrial relevance.

"Too high a proportion of British research and development has been segregated from production and marketing activities to have successful outcomes, and if universities are going to be pushed further into applied research that degree of segregation is going to be increased, and that is not

what Britain needs," he said. The Department of Trade and Industry should expand its role in choosing academic research projects likely to have an industrial impact, on the lines of the Alvey information technology programme, because it was better equipped to do so than the research council, he said.

But the often quoted problem of higher education's graduates being too academic and not commercially minded enough for industry was a fallacy.

"The Japanese schools and universities are far more detached from industry than the British schools and colleges. Japanese industrialists complain just as much about the engineering schools and universities as the British do. But nonetheless the Japanese do pretty well."

That did not mean increasing the proportion of scientists and engineers among the numbers currently entering higher education, as Britain already had a higher proportion of total students doing those subjects than other countries. "First of all this country has got to increase very substantially the proportion of young people completing secondary education if there is to be a great increase in the proportion of young people going on to higher education."

That apart, the problem of developing research findings commercially was a problem for British industry, not for higher education. "In the field of industry the possibilities for the universities and polytechnics to get involved more in applied research and innovation is extremely limited," he said.



Responding to rough justice

The outcome of the further education lecturers' arbitration award, worth a shade over 5.1 per cent on the salary bill, will strike many people as poor justice. Whatever relation it has to that elusive figure "the going rate" or to the current rate of inflation, it does nothing for the FE teachers' position in the external relativities table. And that remains an essential issue if recruitment and retention of staff, and a proper evaluation of the work, are to be resolved.

It was possible to show the arbitrators that since the Houghton report, just a decade ago, an average lecturer has slipped by 43.3 per cent when compared with average salaries in the economy as a whole. In the brief years since Clegg in 1979/80, the average lecturer has slipped 22.3 per cent below the national standard.

Lecturers do not complain, of course, simply of unfairness. They and their institutions know that unless people in other professions can be attracted into public sector education, then its future is bleak.

The data on the relationship between the Lecturer 1 and Lecturer 2 scales was equally dramatic. Two thirds of L1s have had a career scale of just four points. They cannot be attracted into teaching on points any lower and 40 per cent of all L1s have a career scale that stretches over a single point.

It was also possible to show the arbitrators that public sector FE is more vital than any sector of education. The best quality evidence flows from the National Advisory Body exercise - and is consequently about higher education. This part of the education domain has increased its workload by 20 per cent in four years and reduced its unit costs by at least 9 per cent. Everyone is naturally cautious about measures of performance in a quality-led service but it is hard to avoid the fact that, whichever measure is used, we can make good our claim that lecturers work far harder, without additional reward.

With these factors relatively uncontested between employers' leaders and ourselves, and the arbitrators saying that whatever the merits of the case, there is no more money in the system, where do we go from here?

First, the problems of the local education authorities have to be understood. With rate penalties and soon to be rate-capped, they have lost their capacity to raise the cash. The government intervention in local democracy and funding has limited our employers' ability to deal with the problems of post-school education as controllers of their own house.

Second, we can only accept problems as a *fait accompli* at the cost of downgrading the system and devaluing its staff. That is obviously out of the question. There could be no richer gift to the Government than our abandonment of our place in the earnings league.

Third, if the employers cannot raise the cash and we will not reduce our aspirations, a new route must be found. New sources of money need to be investigated and they will not flow from various forms of privatization. They must come from fresh approaches to the Government, one would hope on a basis which every-one responsible for post-school public sector education will support. There will need to be novel forms of negotiation or the system will become more embattled and embittered.

David Triesman

The author is negotiating secretary for the National Association of Teachers in Further and Higher Education

Graduates break the traces

from Jane Marshall

PEKING Twelve university graduates have become pioneers in Chinese higher education reform after accepting work with collectively-run organizations instead of taking jobs assigned by the state.

Eight of the graduates came from universities and institutes in Zhejiang and they have signed on with township and commune-run units in the province. The other four, all graduates from Jilin Agricultural University in north-east China, have agreed to take part in the production and management of peasant-run, specialized local enterprises.

The weekly journal *Liaowang* calls the decision of the two provincial authorities to allow the graduates to take work in local ventures on their own initiative as "a breakthrough in the job assignment for university graduates".

Under the traditional higher education system in China - a country desperately short of trained specialists - graduates are not free to apply for jobs or find their own employment. The state allocates them work, theoretically sharing out the nation's scarce intellectual resources in the most practical way.

In practice, however, the system is inflexible, wasteful and inefficient. Too many graduates are assigned to state-owned enterprises and departments directly under the State Council, while collectively owned units - such as those the 12 Zhejiang and Jilin graduates have joined - remain in great need of trained personnel. But leaders of state units do not allow surplus staff members to be transferred to other posts and the new

workers thus find themselves bound permanently to jobs where they are not needed, wasting their talents which could be vitally important elsewhere.

Even worse, there is no guarantee that graduates, once assigned, will find themselves in positions relevant to their training.

A survey of 5,026 graduates showed that 643 - over 12 per cent - were given jobs which did not suit their specializations. Other reports indicate that in some units half the graduates were misplaced.

According to the survey, some history graduates were assigned jobs in business, while others who specialized in electronics became archive keepers. Language graduates specializing in foreign literature were

sent to be translators of technical data.

A major cause of the mismatching appears to be that, although colleges, work units and personnel bureaux are all involved in work assignment procedures, they function separately and do not cooperate with one another. So the units do not know what kinds of people are being trained in the colleges and the bureaux, which are responsible for the allocations, have no idea about the needs of the work units or the colleges.

Educational reformers agree that more direct contact between colleges and work units is needed and that the personnel offices should draw up comprehensive plans based on employers' needs, according to which

the colleges would recruit and train their students.

To cut waste of talent as well as contribute to the state education budget, it has also been proposed that units should pay for the graduates they employ. Local universities, which were first set up in the early 1980s by municipal authorities to supplement the regular centrally or provincially run universities and to provide graduates for local needs, have already successfully introduced charges for enterprises which take on their graduates.

Another suggested reform is that university graduates should be free to find work for themselves through recommendation or advertising, once important state organizations have received their quotas. Through the signing of their contracts with local enterprises, the 12 graduates from Zhejiang and Jilin have put this proposal into action.

Lecture boycott accompanies riots

from Carolyn Dempster

JOHANNESBURG

Students at South Africa's University of the North (Turfloop) have continued their boycott that began in protest against the Coloured and Indian elections held for the new tricameral parliament.

As widespread rioting continued in Sharpeville and other black townships south of Johannesburg, the students said they would not return to lectures until the black education system was dismantled.

Groups of students who wanted to return to lectures were dissuaded by boycotting factions. Lebowa police were called in and chased some 3,000 students off the campus. The students are now refusing to leave the hostels until they are forcibly removed or the university is closed.

At the University of Transkei (Ulin) where homeland police took over the campus last week, it has been confirmed that four students, including the son of the minister of agriculture, were taken to hospital under police guard after the dawn raid and arrest of some 200 male students.

Mr Linda Erasmus and Mr Miteleteli Makalima were both admitted to Umtata Hospital with serious eye injuries and Mr Peace Kail and Mr Moeletsi Bole with broken legs.

An unspecified number of students were treated at the hospital's casualty

section and discharged. But no further information could be obtained either from the commissioner of police, General J. Mantule or the principal of Ulin, Professor B. de V. van der Merwe as to the whereabouts of the students arrested or what charges they faced.

Almost the entire student representative council has in the meantime fled the homeland for fear of detention. The spectre of Sharpeville has returned to haunt South Africa in the most bloody, widespread and violent of riots since Soweto in 1976.

As the grisly official death toll mounted to 31 hundreds of injured continued to stream into Vanl hospitals after a week of burning, shooting, looting and boycotting, the process of analysis and explanation began.

The trigger to the initial rioting was a rent increase of R5.90 (£2.60) per month which the Lebowa Council wanted to impose on four Vanl Triangle black townships on September 1.

But the actual causes of the violent spillover of black anger are to be found in deep-rooted political and socio-economic grievances.

It was not as if the violence flared suddenly and inexplicably. For the past six months, black school boycotts around the country have signalled a growing frustration among black youth, not only with the education



Pall bearers and mourners escort the coffin of children who died in student clashes with police in South Africa.

system but with their inability to participate meaningfully in their own future. By the end of August, close on 30,000 school pupils had joined the boycott, creating ripples of instability in Pretoria, Pietermaritzburg, East Rand and Eastern Cape townships.

Added to this was a deepening recession coupled with price and

general sales tax rises, retrenchment, rising unemployment and the rejection of government policy for blacks.

Their targets became the councillors responsible for the rent rises - the middle men they felt were representative of the government - and the shops and properties they burned were post offices, general stores and schools.

"vigilance" over political views.

These measures have only fuelled unrest. Feelings have been running so high that the president of the Pristina municipal party committee, Azem Vllasi, felt obliged to issue a denial that any kind of "witch-hunt" was in progress against the Albanian intelligentsia of Kosovo. This denial only confirmed existing rumours and fears to the contrary.

In this situation, it is hardly surprising that young Kosovo Albanians are reluctant to enrol in the new defence department which they see as a tool of the Belgrade authorities to suppress Albanian aspirations. Promises that those enrolling in the department will receive priority in accommodation, scholarships, credits and other "social benefits" have so far had little effect.

The department of sociology and philosophy at the university was accused by the Communist Party of being a hot-bed of "oppositional and opportunist" behaviour. Two lecturers, Dr Fehmi Agani and Dr Gazmend Zajmi, have been expelled from the party and others disciplined. Party directives have been issued calling for increased

recognition of the organization would have encouraged more students to engage in homosexual activity and generated "psychological and physical problems". The university also claimed that formation of the group conflicted with the institution's traditional absence of student fraternities.

The appeals court, however, said the university's real motive was opposition to the idea of homosexuality and since it had allowed anti-homosexual viewpoints to be presented on the campus it was obliged to allow gay students to present their views too.

Lawyers for Texas A&M defended the university's action by arguing that recognition of the organization would have encouraged more students to engage in homosexual activity and generated "psychological and physical problems".

The university also claimed that formation of the group conflicted with the institution's traditional absence of student fraternities.

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Universities braced for another row

from Peter David

WASHINGTON American universities are bracing themselves for another bitter episode in a 10-year-old controversy about the safety of research on recombinant DNA.

In Washington last month two associations representing hundreds of universities and colleges threw their weight behind efforts by the University of California to overturn a court order banning experiments that release DNA-modified organisms into the environment.

A brief filed jointly with a federal appeal court by the American Council on Education and the National Association of State Universities and Land Grant Colleges says the court order is likely to have a devastating impact on university research and drive talented scientists into industry.

At issue is a decision last spring by a federal district court to block a university experiment involving the outdoor release of genetically engineered microbes. Several small environmental groups had filed a suit claiming that the first such experiment, planned by the University of California, posed a risk to the environment and had not been properly approved by the federal government.

A second experiment at Stanford University, entailing field tests of genetically modified corn plants, has also been put on hold pending a final resolution of the legal issues.

The court order is currently being appealed by the University of California, the Department of Justice and the National Institute of Health.

Although no date has been set for a hearing, the case has already become the focus of bitter arguments about the safety and ethics of genetic engineering and the adequacy of federal oversight of DNA research.

In their strongly-worded brief, the ACE and the NASULGC say the experiment, in which a field of potatoes was to have been sprayed with a DNA-modified bacterium designed to resist frost, posed no risk and had been exhaustively studied by the NIH before it was approved.

The brief continued: "By its granting of an injunction, the district court has greatly diminished the trust and confidence the scientific community has built up with the public over the past 10 years. Any erosion of that trust and confidence may take many more years to reestablish. During that period the nation's lead in biotechnology may be lost."

Most molecular biologists in the United States dismiss fears that the blocked experiments would have posed a risk to the environment. But other scientists, including a number of eminent ecologists, claim the release of DNA-modified organisms could lead to problems akin to those caused by the introduction of the gypsy moth, the kudzu weed in North America, and the kudzu weed in North America.

These scientific issues were discounted by the judge who issued the court order last May. Instead, he based his decision on the apparent failure of the NIH to issue "environmental impact statements" required under the National Environmental Policy Act.

Recession halts US influx

from Peter David

WASHINGTON The world economic recession appears to have halted a decade-long influx of foreign students to colleges and universities in the United States, a census conducted by the New York-based Institute of International Education revealed last week. It found that American universities enrolled 338,890 students last year, an increase of only 0.6 per cent over the previous year.

With falling enrolments of home students, American higher education institutions have recently begun to pay increased attention to the possibility of recruiting more foreign students, who already bring about \$10m a year into the country in tuition fees alone. But the world's economic slump and the vagaries of American foreign policy are making it difficult for colleges to boost their overseas enrolments.

The slowdown follows 10 years of such rapid growth that many university leaders predicted three years ago that there could be a million foreign students in the United States by the 1990s.

A major reason for the slowdown, says the IIE, is the financial predicament of oil-exporting countries in Africa, Latin America and the Middle East. The number of students from African countries fell 2.3 per cent to fewer than 42,000 last year. There was a decline in students from the Middle East of nearly 10 per cent and the total from Latin America fell by nearly 8 per cent.

This decline was offset, however, by a startling rise in the number of students from the Far East. The number of Malaysian students rose 29 per cent to more than 18,000 and those from Singapore rose 31 per cent to more than 3,000. Taiwan surpassed Iran as the main provider of foreign students, with a total of nearly 22,000.

The slackening of overseas student recruitment comes just as the United States is considering major changes in government policy in the area. At present, most overseas students pay their own way or receive support from their home governments. Congress now hopes to start the United States' first scholarship programme for underdeveloped students from developing countries.

The change in government policy is being considered by the House of Representatives. The bill, which would allow the federal government to fund overseas students, is expected to be introduced in the House next month.

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Idealists versus professionals

by Peter Scott

The 200 delegates to an Organization for Economic Cooperation and Development conference in Paris last week were treated to two keynote addresses, from a Spanish socialist minister and an American university leader, which neatly summed up two contrasting approaches to higher education management, the subject which they were to discuss.

Senor Jose Maria Maravall Herrero, Spain's minister of education and science and a former politics lecturer at the University of Warwick, described the recent reform of the Spanish universities but set his remarks in an impressive account of the historical development of the European university tradition.

Dr David Gardner, president of the University of California, took as his theme "Managing the American university". The context in which he spoke was the political, demographic, and scientific contours of modern California.

But the contrast between the two men and their two addresses was less between what they said and more between their styles, between the deeply informed ideals of Senor Maravall and the pragmatic professionalism of Dr Gardner, between the former's implicit appeal to tradition and social justice and the latter's explicit enthusiasm for competition and opportunity.

The rest of this seventh biennial conference of OECD's Institutional Management in Higher Education Programme (IMHE) suggested that there was more interest in the Gardner than in the Maravall approach - perhaps because Dr Gardner talked more the kind of language familiar to university and college leaders.

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Senor Maravall

After the keynote addresses the conference split into three sections to discuss themes of ascending generality. The first and most popular considered internal management; the second cooperation between institutions and government; and the third, chaired by Mr David Bethel, director of Leicester Polytechnic, long-term trends.

Later delegates could choose from a collection of competing sessions. The most popular seemed to be on a visit some European IMHE members had made to the United States. "Mission statements" and "leadership styles" and other management buzz-words were freely deployed and enthusiastically taken up.

In contrast parallel sessions on Britain's Leverhulme programme and on West Germany's universities attracted more thinly attended. Perhaps the former had too strong a whiff of

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Beginning of a new dialogue

from D. B. Udalgama

COLOMBO The beginnings of a dialogue between undergraduates and the university authorities, a rarity in Sri Lanka, took place when the University of Peradeniya reopened towards the end of last month, after the closure of the universities in the south in June when a Peradeniya undergraduate and another at Colombo died as the result of police opening fire.

A deputation of Peradeniya students congratulated the new vice-chancellor, Professor Malcolm Fernando, and offered their fullest cooperation in maintaining peace and creating a better atmosphere in future.

Professor Fernando said that students could see for themselves that there were no police on the campus. As long as peace and order and discipline prevailed, police assistance would not be required.

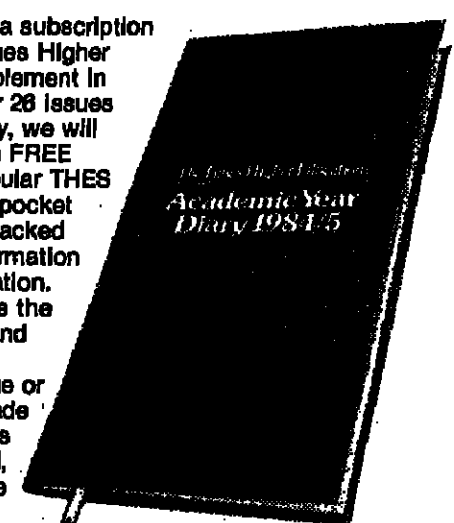
As for disciplining students involved in the June incidents, Professor Fernando said that as the unrest had not been directed against the university administration no action by the university was necessary. But action would be taken against anyone who broke the law.

Professor Fernando told the delegation to form a new students' organization under a new act. Until approval was given, they could submit their problems through the presidents or secretaries of student unions of the faculties, and discussions would be arranged.

On this note the students called off their boycott.

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HEB

Jon Turney reports on recommendations to regulate academic inquiry within institutions

Research seeks a new direction

Has the day of the university research committee arrived? The best answer is that the day of the idea has arrived. Institutions which once would have dismissed the suggestion of a group to oversee and coordinate their research now feel they have to argue against it. Most British universities are at least thinking about such a committee.

But the idea is still anathema to many academics, for whom the words "research" and "committee" sit ill together. The right to free choice of research problems is second only to tenure in the British university lecturer's list of unquestioned goods.

However, that right was established when laboratory apparatus was simple, cheap and easy to maintain. Of course, scientists still use test-tubes and bunsen burners, but now they nearly all want expensive machines as well. The new techniques like X-ray crystallography, nuclear magnetic resonance and electron microscopy make the "well-found" laboratory, not the dual support system for research, a multi-million pound undertaking. Add to that much greater use of computers in all fields, rising costs of basic supplies like chemicals and enzymes, and a constant effort to refine scientific instruments and you have a cost spiral with no obvious endpoint.

This was why the committee under Sir Alec Merrison, which examined the state of university research for the University Grants Committee and the Advisory Board for the Research Councils, made a strong recommendation in favour of research committees when it reported in April 1982. Merrison saw such a committee as an essential first step toward proper planning of research in individual institutions.

But it also inevitably raised the question of planning the balance of research between institutions. Visions arose unbidden of UGC working parties examining regions or disciplines: "I say, there's an awful lot of microbiology in the north-west. I don't really think it would be responsible to support the proposal for another new building in this department, do you?"

That vision was strengthened by a further report to the ABCRC by a working party chaired by Mr Dick Morris, the industrialist. Asked to examine the balance between support for university research and work in institutes by the research councils, his committee also came out with a call for research committees. And, unlike Merrison, this recommendation came with a call for earmarking a portion of each university's UGC block grant for research, with the money to be administered by the individual research committees.

Mr Morris made no secret of his view that this would be a prelude to

more selective support for research, and his report was signed by both Sir David Phillips, chairman of the ABCRC and Sir Peter Swinnerton-Dyer, chairman of the UGC. Now, the UGC's response to the Secretary of State for Education Sir Keith Joseph's questioning about the future of universities also endorses the principle of selectivity. And as we report in this week's special supplement, the UGC document says: "Each university should know what resources it is devoting to research and the distribution of these resources should be a matter for careful planning."

Aside from planning, Sir David Phillips sketches another, perhaps more palatable, role for research committees. He wants the universities to be more vocal about the value of their research, and they can't unless they have a good map of their own work. "I hope universities will speak up for themselves, and they can't do that as an independent federation of research laboratories," he said.

In this light, research committees would be helpful if only as a source of propaganda. But Sir David concedes that as soon as they exist, they may take up a more active role.

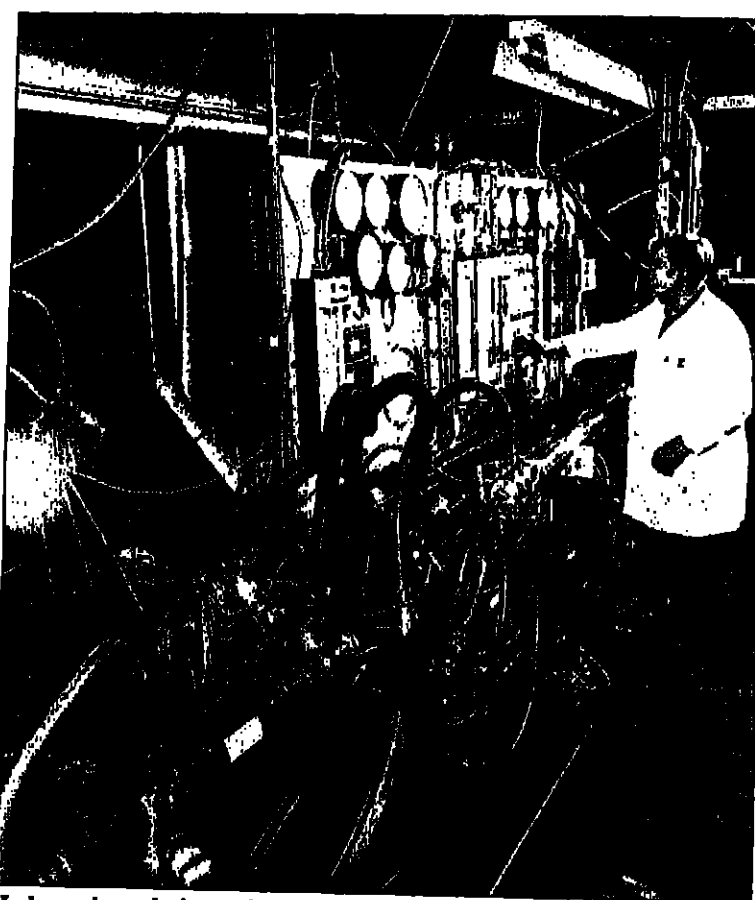
In spite of all this high-level exhortation, for the time being the individual universities can make up their own minds. As on other questions, they reach different conclusions. And while there does seem to be a move toward wider acceptance of research committees, it is still slow.

Newcastle University asked all the others about their research arrangements last summer, as part of its own post-Merrison deliberations. Of the 38 who replied, 17 then had a research committee of some kind. Since then, at least seven more have been set up, including one at Newcastle, so rather more than half of our universities now have a group bearing the name title.

However, when you look at what they actually do, few play a strong part in university affairs, and those seeking to develop a stronger role have to tread carefully. Professor Joe Lamb, chair of an embryonic research committee at St Andrews says his first job was to go round each department reassuring everyone the group had no intention of taking over the direction of research.

Across all the universities, different institutions cover the entire spectrum, from those which have set their faces firmly against such a committee, to one or two who have very active committees managing large portions of the research budget. Being academics, they all have good reasons for their choices.

Edinburgh stands out as an institution with no intention of starting a research committee. It is a large research university, with some individual departments larger than whole facul-



Hydrocyclone design using a test rig at Southampton University

ties in smaller institutions.

Faculties at Edinburgh make the basic funding decisions between departments, and take research standing into account but the university takes the view that decisions on research priorities and promotion are best taken further down the hierarchy. Other universities, including Bath and Birmingham, agree.

The next step up the ladder is filled by universities which share this basic philosophy, but have research committees or boards which play a small part in the overall picture. Such committees, often of long standing, may simply rubber stamp grant applications to research councils, perhaps writing in standard costings for overheads. But most also have a little money of their own to give away.

These central university research funds are hardly a basis for directing the institution, often only amounting to a few thousand pounds a year. But the amounts are growing. Manchester, for example, has just started a research fund for a new research committee with £50,000 of university money. Surrey's research committee has around £100,000 to spend each year, derived from a one-third share of the overhead income coming in from industrially sponsored research.

Surrey is also a good example of how this money is used. Grants are given to help junior academics get their research started - there are five £10,000 awards on offer this year. There is also a single grant of £25,000 available to

help larger research groups do the groundwork which should lead to new external grants. Aside from this, the committee makes the kind of small awards found in many universities, for travelling, publishing, or materials, a little lubrication of the research system.

In a slightly different category are committees whose terms of reference extend further toward direction of research. Here, Oxford, Sir David Phillips's university, is a case in point. The university's equipment committee was reconstituted a year ago, as the research and equipment committee asked, to identify long-term trends in research which should influence university policy; select specific areas of promise which need special attention; monitor changes in research council policy and in the overall balance between teaching and research in the university; and allocate the UGC equipment grant, together with around £100,000 a year for research projects from university funds.

The committee's own notes on its functions still stress that it does not attempt in any way to direct research within the university, but rather offers selective (though modest) support for promising new developments. However, it has at least the potential for taking a more active role, because it handles the £2m a year equipment grant. As it only meets once or twice a term, it will be some time before Oxford academics discover if this group's terms of reference lead it to

distribute the equipment funds in a way calculated to influence the pattern of developing work in the university. A similarly tentative approach is in evidence at Aston, where a research committee was established about a year ago. It is attempting to encourage departments to organize their research into groups with a clear focus, again using the equipment grant as a lever. This will benefit special areas like cancer chemotherapy within pharmaceutical sciences and computer-aided design within engineering. The aim is to have 12 or 15 groups in each of three faculties, but the group reckon that this will take another two years at least.

Today, the only university which operates anything like the strong model of a research committee outlined by Morris is one which has had the Salford. The CAMPUS venture and enterprise fund has received money for the past two years from the university block grant, and it is allocated on the advice of a group of academics and industrialists. It is still not a great sum, around £700,000 so far, but it does involve outsiders in vetting proposed research projects, in line with Salford's general policy of encouraging contact with industry.

The pros and cons of all these models are likely to be argued in more detail over the next year or two. It is clear the patchy coverage of existing research committees doesn't offer a basis for gathering information for decisions on selective funding of university research.

Some research committees, like Liverpool's, produce extremely detailed reports listing all the work done in every department. But although this is becoming more common, if only as a resource for local industry, universities which object to the ideas behind research committees will remain reluctant to compile such information centrally.

In addition, most universities remain opposed to any suggestion of earmarking money granted for research by the UGC. However, the trend at the centre is still toward greater direction. The UGC will return to the Merrison proposals in the wake of its strategy exercise, although Sir Peter Swinnerton-Dyer has indicated it will take some time to decide exactly what sort of arrangements the committee wants to see for managing research in individual universities.

The ABCRC, for its part, is shortly to review progress on the recommendations of the Morris report and Sir David Phillips will continue to point out that it is difficult to argue for more money for research when no one really knows what happens to the estimated £600 share of the total UGC budget used for science.

Meanwhile, perhaps more universities will come to the same conclusion as the special Newcastle working-party on the subject, which was convinced if there was to be a prominent and explicit declaration of the determination of this university to be a front-runner in research.

barely more than 100 students, and the hard-core of feminists numbers only about 30. And, as one of the compilers of the questionnaire emphasized many of the women who answered made a point of saying that they didn't regard themselves as feminists.

As a result of the questionnaire several proposals have been put forward. Sexual harassment should be recognized as a problem at the LSE. A female member of staff should be appointed to deal with specific women's problems. Further investigations should be carried out into sexual bias in academic course.

Are these female pipe-dreams? At an end of term party I asked one of the most charming (male) academics I know, what he thought would happen as a result of the questionnaire. Surrounded by a bevy of male students he replied with a twinkle: "Oh, I suppose now we know that we'll have to be a bit more careful." Of course I joined in the laughter. I'm a woman and one of his students. Afterwards I hated myself.

Penny Marshall

The author was editor of the London School of Economics student newspaper from 1982-83.

Breaking down the barriers of learning

Knowledge has never come in neat labelled packages. As our post-industrial society moves rapidly into the high-tech era it is becoming increasingly apparent to many that the traditional division of learning into disciplines, many of them developed in the late nineteenth century, is proving inappropriate.

One result - as far as cash limits and student numbers permit - has been a growth in the number of interdisciplinary courses on offer in universities, polytechnics, and colleges. These breach traditional disciplinary boundaries and aim to provide a radically different area and method of study. It is much more than a multidisciplinary course where two subject areas are studied side by side, for example in a modern languages course or a politics and economics course.

Many interdisciplinary courses are of course accepted features of the landscape: business studies and environmental sciences are classic examples, but African or American studies, building studies, maritime studies, peace studies, social policy, food sciences, and new courses in biotechnology and information technology all work from an interdisciplinary mould.

But new courses appear to be emerging which challenge these traditional boundaries even further, and some lecturers argue that given resources even more of these courses would have been introduced.

The Open University has been responsible for a great deal of innovative work in the interdisciplinary field, which Mr John Clarke, sub-dean of the social science faculty, puts down to the general ethos of the institution. Staff have almost certainly been stimulated to devise and produce new and relevant courses because of the unique range of potential student customers it has, and because the medium demands a modular course structure more akin to the credit system used in the United States.

The growing importance of such courses was recognized at a conference on the future of the arts and social sciences held at Leeds University last April. Representatives from 50 institutions passed a declaration in defence of their subjects, noting in particular "the important new research and teaching developments" taking place in the interdisciplinary field, and urging increased funding to allow them to "respond responsibly" to teaching and academic needs.

One conference session was devoted to the problems of mounting such courses - from the administrative, and the mounds of paperwork

Paul Flather looks at the growing trend towards courses in interdisciplinary studies

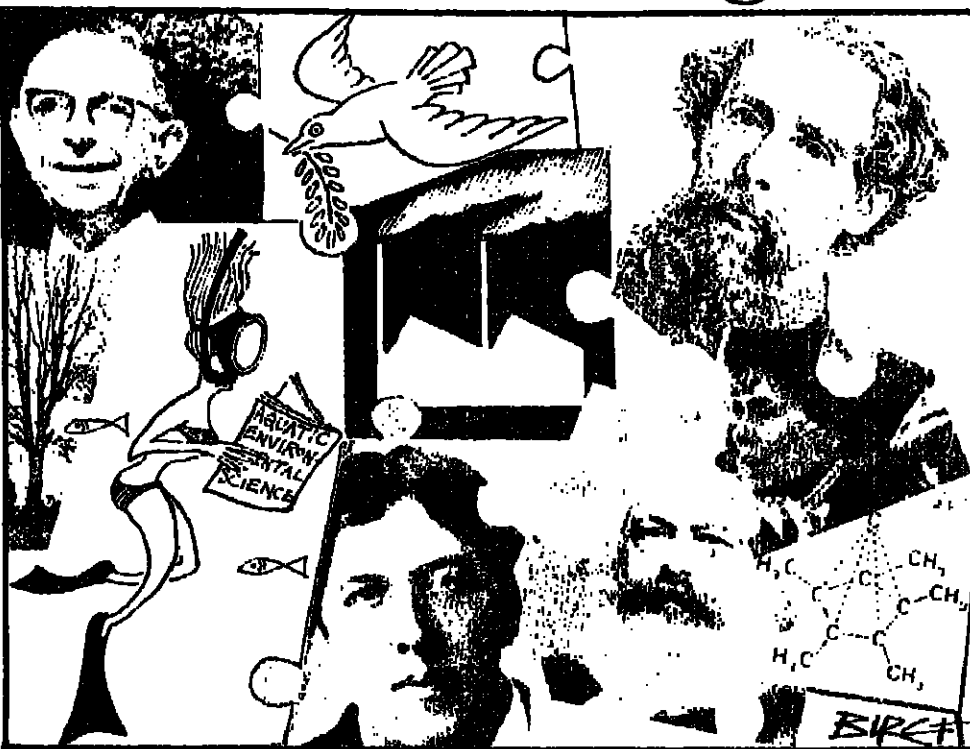
inevitably involved in drawing together members of different departments, to the intellectual, of creating a new unified teaching and working approach ethos. Among those wholeheartedly behind such courses was Professor Michael Dummett, professor of logic at Oxford University.

Another supporter was Professor Alan Wilson, professor of urban and regional geography at Leeds, who has made a strong case for reforms in the way institutions are currently run to allow more such courses to be developed. He believes such concerns as imagination, and critical human consciousness, are being squeezed out by the growing demands of specialization, and he blames in part the organization of teaching and research into "myopic disciplines".

Professor Wilson believes that disciplines can be seen as coalitions of individuals pursuing their own interests, so that the preservation and creation of disciplines in effect becomes a political concern as well as an academic one. In that case the future of interdisciplinary courses becomes bound up with questions of resources, vocational demands from society, and Leavisite notions of university educating specialists who are still "in touch with a humane centre".

According to Dr Timothy Curtis, dean of combined studies at Lancashire Polytechnic, the old gap between the sweaty, hoary-headed toiler looking for vocational training and the gentleman intellectual has gone. "I am not sure students want to do straight single honours anymore, nor do employers particularly want them," he said. Dr Curtis is also chairman of the Council for National Academic Awards combined studies humanities board.

New types of courses are needed for the 1980s. One of the best known prototypes is the politics, philosophy and economics course at Oxford University, which really came into its own after the war as "modern greats", and emerged as the university's largest honours school. At its best the course should equip students with the ability to



move in and out of the three discipline areas. As Mr R. W. Johnson, a PPE tutor at Magdalene College, put it, a successful student should know the philosophical theories, the economic problems, and the political catches.

It has been easier to mount interdisciplinary courses at Oxford and Cambridge, where the split trips allow even greater flexibility, because of the freedom allowed by the tutorial system. Timetabling constraints loom large in most other institutions, particularly in polytechnics which have often been quicker, along with the new universities, in promoting such courses. But they have been wary of offering too student-centred a course - allowing free choice which might leave students a master of no trades, something that Oxbridge is not afraid of.

Three main factors appear to be behind the growth in such courses. First are the changing demands from society in the 1980s. Second is student demand, for example for women's studies

or third world studies, or a new course in western civilization at St David's, Lampeter, which followed reforms in the way religion is now taught in schools. Finally such courses can be cheap to try on an experimental basis.

In the end though interdisciplinary courses provide important new insights and offer what students now want to study, and public institutions should respond to both. It is a question of extending the range rather than believing current disciplines have had their day, which clearly they have not. Dr Tony Brothers of Lampeter is quite clear: "We have to change according to the demand of students. If we don't we will do ourselves down."

Dr Hamish Henderson, who teaches Scottish studies at Edinburgh University, put it a different way: "How can we possibly understand Nazism without understanding folklore, traditions, the whole German context, and that means understanding many different disciplines?" he asked.

Crossing Britain's boundaries

The state and development of Britain since industrialization is the aim of the British studies course offered at Brighton Polytechnic. It crosses the boundaries of history, covering topics such as secularism, imperialism, political ideas and development; English literature, which provides a contextual cover for the study; and geography, which covers relations with Europe, the third world, and the United States.

The aim, according to Mr John Boswell, Brighton's courses coordinator, who teaches a compulsory key concepts option, is to enable students to understand the present state of the nation. A range of further options such as philosophy and art criticism allow more detail to be added. The artist and industrialization option, for examples, includes study of Dickens, William Morris, John Berger, Colin Bell, Oscar Wilde and Herbert Read.

To date, the intake has remained about 50 a year, with most opting for the English literature component instead of geography or history. But when the arts intake is cut back at Brighton, the 1985 entry will be lower. Welsh, Irish, Celtic and Scottish interdisciplinary studies are on offer at a number of other institutions. The older Scottish universities all have special schools or departments in Scotland. At Edinburgh a popular course in literature and popular tradition which draws on history and English subject areas and is boosted by a large tape library of ballads and songs is to be extended for the first time into a four-year degree in Scottish ethnology.

Dr Hamish Henderson, a senior lecturer in the school, said it was designed for those interested in folk lore and traditional life, subjects which have been largely neglected in British studies. He is still novel in Britain. The older literature course has attracted 30-40 students a year for 10 years. Dr Henderson said: "It is quite impossible to understand the work of James Joyce or the 'Mabinogi' Welsh folk tales without some understanding of folk

A new look at the environment

The merger of King's College, London, with Queen Elizabeth College and Chelsea College, has given an important fillip to the human environmental studies, started in 1975 for students wanting to study the interaction of people and their environment. The aim is to investigate the problems people have created through land-use, chemical substances, and changing the environment.

The course was the brainchild of Professor Don Arthur, now retired, who impressed on all his staff the need for a new attitude in teaching the course. He certainly did not want the various disciplines, such as

medical sciences, pharmacology, biology, geography, geology, and earth sciences, all taught in separate units.

Dr Steven Smith, a lecturer on the course, explained the point was really to understand man in his environment and the teaching was not at all in introductory blocks: "We will teach as much of a certain subject as is needed to explain the problems." The first year is divided between internal study of cells and the physiology system, and external study of the environment, conservation, ecology and natural processes.

Specialization can then be followed

Criticisms are overcome

A new interdisciplinary course was born at Nottingham University as a result of regular meetings held over the past five years by a close-knit group of lecturers and research students interested in critical theory. Finding common interests they decided to put forward a course proposal, an MA in critical theory.

They were allowed to go ahead, but colleagues warned of the likely difficulties of blending staff from half a dozen departments, American studies, English/literatures, French, Hispanic studies, German, and Slavonic studies, and the prospect of little student demand.

The course has three main areas: theories of narrative, covering classic structuralist texts for example by Roland Barthes and Gérard Genette, linked to study of topics, plot, character and so on; theories of readings, covering the work of many critics from I. A. Richards and Empson to Jakobson and Wolfgang Iser; and literature and social theory, analysing classic texts as Dickens, and key Marxist concepts. The National Association of Teachers of English has decided to hold a 1985 conference at Nottingham on the theme of those on critical theory which the course sees as an important success.

Civilization broken down

The aim of the interdisciplinary course at St David's University College, Lampeter, which has a long reputation for theological and religious study, is to examine the roots of western civilization as a whole, to trace its development and to discover where it stands today.

The course studies the twin forces that have shaped western civilization - religion (what people believe) and ethics (the principles that guide people). One of the explicit underlying aims is to break down what are seen as artificial disciplinary boundaries, with lecturers drawn in from the departments of classics, French, English, philosophy and theology.

One of the main influences for mounting the course was the changing approach to religious studies in the schools, which have over the last 15 years become much broader and more philosophical. Dr Tony Brothers, a classics lecturer organizing the course, said the college had noted demand from school-leavers wanting to pursue this approach at a higher level. About five students enter the course every year.

Two compulsory subjects are Christianity, examining the early Christian thought of Jesus; and the history of moral philosophy, a study of ethics from Plato to Nietzsche.

A popular combination

A number of institutions have run combined studies or modular studies or combined humanities - courses which allow students to mix and match from a range of options. Lancashire Polytechnic, which has planned a course since the late 1970s but was only able to put it on last year when it was restructured on one main site, for example offers a range of 19 options from American studies to psychology.

But as Dr Timothy Curtis, dean of combined studies, points out, it is not a random supermarket system: students must specialize in two chosen areas in their final two years. Typical groupings or nests are English, history, and education studies, or mathematics, physics and astronomy, while a more adventurous choice would be psychology, geography and English.

It is a popular course with 10 applicants per place, and an intake of 270 full-time and 130 part-time. But as yet one of the sticking points is that under current Council for National Academic Awards rules qualification certificates cannot list the individual subjects taken by a student, and a BA in modular studies is not exactly appealing to future employers.

Students opt to take Open risk

The BA at the Open University offers opportunities for a whole range of interdisciplinary courses which have been produced over the years. Indeed the OU is widely accepted as a major innovative centre for such courses. One of the clearest examples is a course in risk, developed from an earlier version run at Kent University.

The course aims to look at a common enough theme in life, linked as it is to choice, possibility, utility, and ultimately to questions of rationality. Risk is studied in monetary, physical, and social contexts, and through such debates as determinism in physics, evolution in the sciences, politics in the work of John Rawls and Robert Nozick, music and art through the work of Jean-Paul Sartre.

The course began in 1980 with 1,000 but is now down to about 300. Course tutors have noted some students were plainly unhappy about being unable to follow the paths of well-defined disciplines - the very challenge that excited the academics involved.

Popular culture, another relatively new OU course, taken by 600 students draws on anthropology, history, social policy, English literature and sociology, in its aim to investigate the popular items of our lives, television, holidays, and rituals such as Christmas. A one-week summer school involves study of Blackpool, movie stars, and images of the British.

"The changing experience of women which attracts about 500 draws on science and technology, economics, sociology, and education, focusing on the historical and contemporary changes in the position of women, in women's social role, the family, state policy, and images of women. Third world studies, which attracted more than 400 in 1983, its first year, involves study of colonialism, the expansion of Europe, third world agriculture and industry, and international links.

Dr Ben Crow says such a course is inconceivable without breaking traditional academic boundaries. The aim is for students to understand alternative theories of development. But we hope they enjoy it as well."

The cliché of sexual harassment of students, perpetuated by every other postwar novel about student life, is the academic exercising his *droit de professeur* over a sherry after the weekly tutorial.

The reality is less dramatic, more pervasive and much harder to define. Although of course, serious cases of student sexual harassment do occur, the most common instances are to be found in trivial daily encounters; not only between staff and students, but between students themselves.

In a recent questionnaire at the London School of Economics, sexual harassment was defined as "any action that establishes a sexual relationship between the perpetrator and the recipient, which is undesired by the recipient." Specifically, all female students were asked about their experiences of leering, staring, unwanted sexual remarks, teasing, innuendo, unwanted physical contact, direct or indirect sexual propositioning, pestering, and sexually-motivated assault.

The questionnaire was compiled by a group of female undergraduates and had the full backing of the academic body. Despite the exam pressures of the summer term, there was a remarkably high response. A total of 715 students - just over half the female body - completed their questionnaires.

Of these, 368 reported that they had experienced some form of sexual

Hidden hazards of student life

harassment (52.6 per cent). Over 100 cases of serious sexual harassment were reported, 15 of which involved academic staff. In the category of serious sexual harassment came sexually-motivated violence, sexual propositioning, persistent sexual pestering, verbal abuse, and unwanted physical contact. However, a much larger number of women were upset by the perpetual sexual undertones of college life: the leers over the library table, the suggestive jokes in the bar, the "girlie" calendars in the halls of residence, and the packs of men talent-spotting on the college steps. One can understand why a high proportion of overseas female students, who are perhaps particularly vulnerable in these areas, replied to the questionnaire.

On the academic side, the low proportion of female academics and the disregard for women's studies and feminist criticism in the curriculum, were adduced as issues which undermined the intellectual confidence of women at college. In the words of a second year student: "Generally, I attend a class taught by a man about mainly male concerns."

A number of women were disturbed by what they perceived as patronizing

or trivializing attitudes towards their contributions in class debate. I myself found it disconcerting to be told, however jokingly, that my appointment to the student-staff academic affairs committee was due more to the fact that I was considered to be a "fresh young thing" who would enliven the meetings, than to any valuable contributions I might make on matters of policy.

Most respondents did not find having male class teachers and a majority of male students a problem. However, there was a considerable proportion of women who did feel intimidated by such a strong male presence. One third said they were less ready to speak in classes and seminars which had a majority of male students. It would seem that a significant number of female students were ill at ease and unhappy about the nature of the classes that they attended.

Possibly the most worrying statistic of all was the number of women who felt that their work had suffered as a result of sexual harassment of some kind. Of the 368 female students who reported sexual harassment, 56 considered that their work had suffered. Some of them stopped contributing in

classes, others stopped attending completely. Some avoided college facilities such as the library and study rooms, and a small minority felt emotionally quite unable to cope.

The questionnaire endorsed the need for an official channel through which women could voice their complaints: of the 15 cases of serious harassment by academic staff, only five cases were reported to someone in authority. As one student remarked: "Though in my department the majority of undergraduates and half the research students are women, there is only one female part-time member of staff. As for dealing directly with the department in a case of sexual harassment, I just wouldn't bother."

A typical male reaction to the questionnaire was one of surprised amusement. How could women feel intimidated, or indeed how on earth could manifestations of sexual approval for women be received with anything but pleasure? Some students, both male and female, dismissed the questionnaire as the work of rabid feminists.

This is hardly the case. The LSE is by no means a hotbed of feminism. True, there is a women's centre which opened last year, but it is used by

Great expectations . . .

In the spring of 1982 researchers in the department of government, Brunel University carried out a large scale survey of final year undergraduates in a sample of universities, polytechnics and colleges of higher education. It was conducted as part of a project commissioned by the Department of Education and Science to discover the expectations of higher education held by employers, students and academics. The results of the research have been presented in a series of 10 reports and this article by CHRIS BOYS concentrates on the findings from the students survey.

The comparison between university and polytechnic undergraduates is interesting in the light of findings from the project's employers' study (Paper No. 3, *An Employers' Perspective*, by J. Roizen and M. Jepson). Many employers used higher education as a useful screening device in which entry qualifications, particularly A levels, and the type of institution attended were important in the initial selection of likely recruits. Underlying this were practical considerations including keeping down the costs of recruitment but there were also strong indications that they felt that ability measured by examinations at 18 was not significantly altered by higher education. There was a widespread preference for university over polytechnic and college undergraduates because employers perceived them as having higher entry qualifications than other undergraduates. Attending a more vocational or relevant course in a polytechnic did not, it would appear, compensate for a candidate's lower A level grades. To add to the problems of non-university undergraduates, there was little evidence that employers were enthusiastic to recruit them for posts traditionally filled by non-graduates.

These findings are likely to be controversial. Although they may be supported by the somewhat higher proportion of polytechnic undergraduates unemployed six months after graduation which is consistently found in annual first destination surveys, the difference is relatively small and unemployment rates vary much more within sectors than between sectors. It is also a feature of these statistics that polytechnic graduates from sandwich courses have lower unemployment rates than graduates from non-sandwich courses in polytechnics; subject and course of study appear to be more important to employment prospects than appeared to be the case in the employers' study.

Before looking at the findings, a note of caution: care needs to be exercised in drawing conclusions from a comparison between university and polytechnic undergraduates on the basis of the subjects chosen in this survey. It must be stressed that the subjects included do not represent the full range offered by the two types of institution and that the selection does not permit a complete and direct comparison.

The analysis is restricted to the 10 subject areas shown in Table 1. Because gender, A level qualifications and the type of institution attended may be anticipated to have some association with reasons for entering higher education and employment expectations, the following points should be kept in mind.

The proportion of women respondents from each subject area was below one third except for polytechnic applied social science/sociology (52 per cent), university history (49 per cent), polytechnic business studies (36 per cent) and university mathematics (34 per cent). Only a tiny minority of engineers in the two types of institutions were women.

Oxbridge and the major redbrick (older civic) universities accounted for half of statistically weighted university

respondents in all subject areas except engineering. The largest percentage of university engineers were in former colleges of advanced technology.

Of those who entered less than one year after completing full time education, approaching half or more of polytechnic undergraduates in each subject area would have preferred to have gone to a university at the time they started their courses. This ranged from 48 per cent of applied social science/sociology and 49 per cent of engineers to 67 per cent of polytechnic chemists. More undergraduates aged 25 or older were in the type of institution which they most preferred.

There were large differences in the more obvious course features associated with employment. A much higher proportion of polytechnic undergraduates were taking sandwich modes of study and considered their courses were preparing them for specific vocations or professions. Virtually all polytechnic business studies undergraduates and computer scientists 82 per cent of polytechnic engineers and 49 per cent of polytechnic chemists were undertaking sandwich modes of study. In the universities, only engineering had a substantial number of undergraduates on sandwich courses (50 per cent) and a number of these were in former colleges of advanced technology. In all other university subjects and in polytechnic applied social science/sociology, the proportion of sandwich students was well below 10 per cent.

Only a minority of undergraduates were sponsored. In the polytechnics this was mainly restricted to engineers and business undergraduates. The highest proportion (40 per cent), however, was to be found in university engineering. This may be explained by the fact that almost half of university sandwich engineers were taking a 1-3-1 pattern of work experience. (That is, a three-year course sandwiched between periods of working for an employer).

These figures refer to those aspects of courses more obviously geared towards employment. There was a similar pattern of responses when undergraduates were asked to evaluate the extent to which they expected their course work to improve their employment prospects, and the extent to which they felt courses were preparing them for the type of employment they had in mind. While vocational subjects ranked more highly than other subjects in the strength of responses, approaching half or more graduates in any subject were prepared to rate their courses relatively highly in terms of future employment. Only a minority strongly disagreed

that their course work would enhance their career prospects.

Reasons recalled for entering higher education revealed subject variations which transcended the division between university and polytechnic undergraduates. (Table 1) It was evident that undergraduates had mixed motives in which the desire to study particular subjects was important. Thus, the high proportions who had felt that they wanted to "pursue their own subject" and had felt that they had wanted to study a subject in which they had been successful at school. Many were prepared to agree that interest in subjects was the main reason but only a minority were prepared to strongly agree that this was so.

In keeping with the more "vocational" nature of their courses, a higher proportion of polytechnic than university undergraduates had entered with particular occupations in mind. In contrast, 70 per cent or more of university undergraduates in subjects other than engineering had entered their courses either to develop general skills suitable for a wide range of occupations, or needing time to decide on a particular career. University undergraduates were also much less likely to have chosen course options to fit in with their career plans. For example, 76 per cent of university economists compared with 16 per cent of polytechnic business undergraduates disagreed - either strongly or reservedly - that they had generally chosen options in this way. The difference between university and polytechnic chemists was smaller - and smaller still for engineers.

Whatever precise mix of motives, many undergraduates in all subject areas had entered higher education believing that they would increase their earnings. Again the strength of this feeling varied between subjects but a high proportion of those in less "vocational" courses had felt that their earnings would be enhanced. For many of those who entered mainly to pursue their own subject, it was clearly felt possible to combine interest with investment.

The majority of undergraduates in both types of institutions believed that university graduates were at an advantage in competition for jobs in which a field of study was unspecified. Greater confidence was displayed by polytechnic undergraduates when asked to compare their employment prospects with undergraduates from similar courses in other types of institutions. But apart from engineers and chemists, over half of undergraduates in polytechnics rated their prospects below those of graduates from Ox-

bridge or other universities. This was underlined by the much higher proportion of polytechnic than university graduates who were dissatisfied with the number of employers who visited their institutions. This was somewhat consistent with preferences expressed by employers in the Brunel study. However, when the expectations of undergraduates from different subjects and types of institutions were compared, it was evident that they varied with subject rather than with other variables.

Responses to five questions have been chosen to indicate employment expectations. In Table 2, except for the column showing mean starting salaries that undergraduates expected to earn, the closer a score approached the maximum of 100, the greater the undergraduates' *disagreed* that (i) they expected someone with similar qualifications to experience difficulty finding a job; (ii) they expected to be over-educated in the jobs they were likely to get when they graduated; (iii) they expected to be unhappy in these jobs. Most subjects registered high scores. Many undergraduates had entered their courses believing that higher education would enhance their earnings; the majority expected better paid jobs than they had not gained degrees. (Table 3). There were, again, subject variations within sectors although university chemists, mathematicians and historians were more likely to strongly agree than their peers in comparable subject areas in polytechnics.

To test whether the lower expectations of historians in universities could be explained by the relatively high proportion of women on such courses, the expectations of both sexes were compared in each type of university. Table 4 shows the results of the comparison of responses to the statement: "It will be difficult for someone with my qualifications to get a job". Because of the relatively high proportion of women and because of a contrast in employment expectations, the figures for university mathematicians and university historians have been presented. This was possible in four types of institution: Oxbridge, Major Redbrick, Minor Redbrick and New Universities. Again the responses have been scored although percentages refer to the proportion of the aggregate score within an institutional type.

To test whether expectations of difficulty in finding employment were realistic, responses were compared with the proportion of 1982 graduates finding a permanent job six months after graduation. There was a similar

pattern although first destination statistics must be treated with some caution because of the high proportion of undergraduates in the Brunel sample who agreed that they would be prepared to be unemployed until they found a job they wanted. Only a minority agreed strongly that they would be prepared to do so, and it was noticeable that the percentage was highest amongst those subjects in which confidence in the value of qualifications tended to be lowest - polytechnic applied social science/sociology and university history. High or unemployment rates amongst undergraduates in those subjects may be explained by a willingness to be unemployed or, more likely, a willingness to be unemployed may be explained by difficulties expected in finding a job.

However, in addition to the number who were prepared to be unemployed, only a minority strongly agreed that they were more flexible in the type of jobs they were willing to take than they were when they started their course. Most felt that good long term career opportunities were very important in their career plans except for polytechnic applied social science/sociologists and university historians. Rapid promotion and high starting salaries were less important.

The survey shows that polytechnic undergraduates, at least from more vocational courses, had high career expectations which were equal to those of their university peers. They entered these courses with high expectations of employment and with some perception that university graduates were more highly valued by employers. While these expectations did not appear to be unrealistic in terms of known facts about first destinations, to some extent these findings are at odds with those of the Roizen and Jepson employers' study. However, consistently with the findings from the interviews with employers, university undergraduates in courses which were not ostensibly as vocational as similar courses in the polytechnics also entertained high expectations. In addition, the majority of conventional school leavers with appropriate qualifications preferred to go to a university at the time they entered higher education. Polytechnics were a long way from achieving parity of esteem with the universities.

The survey also shows that many of these final year undergraduates, despite being more pessimistic about their employment prospects than when they had entered higher education, maintained a belief that their course would increase their future earnings. There was little evident dissatisfaction with courses or disappointment with higher education for not fulfilling expectations. For many undergraduates education remained a valuable and profitable experience. Only their long term experiences in the labour market will confirm whether this confidence was misplaced.

The author is in the department of government at Brunel University.

Table 1: Reasons for entering higher education (of those entering directly from full time education)

I thought I would make more money if I got a degree
I wanted to pursue my subject
I wanted to do more of what I did best at school
My main reason for being here is to learn more about subjects which really interest me
I was inclined towards/ had decided on a particular occupation and this was the training I needed

Polylectic Subjects	(I) Felt this Very Much	(II) Felt this Somewhat	(III) Felt this Very Much/ Somewhat	(IV) Strongly Agree	(V) Agree with Reservations	(VI) University Subjects	(I) Felt this Very Much	(II) Felt this Somewhat	(III) Felt this Very Much/ Somewhat	(IV) Strongly Agree	(V) Agree with Reservations	(VI) %			
AT&T Sociology	36	35	68	41	42	35	28	History	15	39	86	71	31	87	11
Business Studies	48	44	64	44	7	41	43	Economics	32	37	77	56	18	38	22
Chemistry	21	54	90	77	27	51	45	Chemistry	34	46	91	74	22	42	28
Computer Science	38	51	70	37	13	42	71	Maths	26	47	88	87	22	34	23
Engineering	37	48	83	77	12	55	28	Geodesy	26						

Harold Silver



The name of the game is mistaken identity

The student in my extramural class, some 20 years ago, audibly gasped when, discussing the history of women's suffrage, I mentioned Barbara Bodichon, formerly Leigh Smith. The student, refusing to explain her excitement, invited the class home for coffee afterwards. There, late in the evening, she produced for us an artist's folder full of drawings and paintings. She had had them for some years and had given up trying to identify in the art books the artist whose signature appeared on the work as Barbara Leigh Smith. The moment of the gasp was when the two names became one — one of the great names, if not of painting, of women's history, one of the founders of Girton College, Cambridge.

We puzzle over changes of name, resist them. Women have anxieties about the surnames they acquire (and these days often don't) on marriage and London University colleges have anxieties on amalgamation. New identities are not established overnight. How many generations did it take for the elementary school to become the primary school? And now, alas, colleges.

The *Sunday Times* and Peter Wilby are currently advertising a *Good University Guide* — which may be proleptic, but is wrong on several counts. It claims to assess "each university, polytechnic, and college of further education". It is, however, a higher education not a university guide, and it means colleges of higher not further education. Similarly, the Economic and Social Research Council has recently published a booklet on funding, describing one of its schemes as available to staff in "universities, polytechnics, colleges of education and colleges of further education". Confusion further confounded, since there are no longer such things as colleges of education, and colleges of further education (unless you include polytechnics in the definition) are not engaged significantly in advanced level work or research. The ESRC means neither the one nor the other, but, again, colleges of higher education.

When, as a speaker at a local organization, I am introduced as principal of a college of further education, or some remote version of the truth, I can't complain — though I expect a chairman to do a modicum of homework. The *Sunday Times* and the ESRC likewise.

The problem for the colleges of higher education is that they have changed identity without a once-for-all seal of public identity, as happened when the colleges of advanced technology or the polytechnics were designated. The colleges of higher education (some of them, just to complicate matters, preferred to become "institutes") came into the category from different directions — former colleges of education, former colleges of technology which had not become polytechnics, and institutions incorporating a former college of further education (of art, commerce, technology, or) or amalgamating with one another. Some of the colleges retained teacher education, some used it, some acquired little or nothing else, and some lost it. Diversification took different forms. But the common feature was that they were a group of institutions acquiring a "higher education" definition by virtue of their proportion (often 100 per cent) of degree level work.

A feature of many, by no means all, of the colleges was that they tended to be modest in size and attractive to students opting against the large institution. I have had difficulty explaining the difference between a college of this kind and other institutions of

higher education. Having talked with me recently, one visitor volunteered: "A college of higher education is a small university." It was midway between a statement and a question. Apart from the college's inability to award its own degrees, and its partnership with the Council for National Academic Awards to do so, the difference did not seem explicable. BA degrees, master's and research degrees, professional training, postgraduate diplomas, undergraduate and postgraduate teacher education, funded research — the main difference had emerged as one of scale. In other colleges a greater emphasis on part-time degrees or a substantial fraction of non-degree work might have produced a different impression, but for many of the colleges, the dilemma of explanation would be the same.

In the rundown of teacher education in the 1970s and 1980s and the use of early retirement schemes to enable appointments to be made in expanding areas of work, a range and quality of staffing resulted that was little or no different from those of a university. Degrees were served in the same way as those of universities by external examiners, and standards were not identifiably different — as CNAAs and university validation was designed to ensure. Quality of student intake, measured by A-levels, was lower in the colleges as they strove to project their identity into the schools, but with emphasis on teaching styles, and a greater proportion of higher, different degrees in achievement as measured by degree results became less and less significant. The colleges, notably those validated by the CNAAs, developed in a context of detailed planning and course and institutional evaluation which thrust them rapidly into the higher education spectrum, bringing new characteristics to it.

My visitor has to cope with differences among the colleges, and between them and the polytechnics, just as he had tried to understand the polytechnics and universities, their differences, similarities and overlap. At the same time as defining themselves in opposition to or in symbiosis with the universities, the polytechnics looked suspiciously at the larger number of mainly smaller colleges which attempted to tidy up the higher education landscape.

So, back to my weary battle for a name. And yet more dismay when I came across the prospectus of the Polytechnic of Central London, which outlined that the CNAAs council drew its membership from "the universities, polytechnics, technical colleges, local authorities". As a council member from a college of higher education, I, it and the CNAAs statutes seem to be wished out of existence. Polytechnic directors and prospective writers, education correspondents and research councils, should by now have understood the change of name and reality. After all, the *Sunday Times* has hardly been a stable entity. The ESRC has only recently crept out of another name: the polytechnics are hardly united in interpreting their nomenclature. A local club chairman or an extramural student may not successfully complete their homework, but there are others who should do better. How long will it take? And what? A polytechnic, picket? A nomenclature stoppage? A work to name rule? For help, see the *Guide to the Colleges and Institutes of Higher Education*.

Cold comfort in the desert

The issue of the status and safety of foreign nationals in Libya was raised again last week following the visit of Labour MPs and MEPs to Tripoli. What is the position of British academics who take jobs at one of the Libyan higher institutes? IVOR GIBBON (not his real name) left his post in Libya last year; here he looks behind the enticing advertisements.



Towards the end of the last academic year, a number of sizeable advertisements appeared in the education press, giving details of posts available at the higher institutes of Brack, Hoon and Bani (or Beni) Walid in Libya. The jobs offered were mostly in technological disciplines, medical and food technology, mechanical and electrical engineering and electronics; there were also a number of vacancies for physicists, mathematicians and teachers of English as a foreign language.

Advertisements referred to the higher institute as "newly established". This is inaccurate. An old prospectus from the Higher Institute of Electrotechnics states: "In September of 1977 the institute will recommence work in a newly-completed campus at Beni Walid." This recommendation may have been piecemeal, as the institute was already operating on a temporary site in Malta at that time, but it is certainly long enough ago to make the term "newly established" somewhat misleading, even if the period in Malta is ignored.

The present institutes were built round about the same time by a Finnish prefabricated construction company, so that the charge of inaccuracy in this matter may justly be applied to all three. Why the institutes decided to represent themselves as brand new must be a matter for speculation, but I would suggest that it may have been a device to stifle speculation about why such large numbers of staff were being sought at one time. An advertisement in *The Guardian*, for example, issued jointly by the institutes at Brack and Bani Walid, sought staff in some 25 areas of specialization for the former, and 30 for the latter.

The salary scales, advertised as "gross annual emoluments", appeared generous, especially when the additional gratuity of two months' salary for every completed year of service was taken into consideration. Hoon offered more than the other two institutes but in every case it would appear that full, associate and assistant professors could expect to earn in excess of £20,000 a year.

Once again though, it is necessary to examine the figures more closely. It should be noted that income tax is not, as in some Arab countries, non-existent and that the figures quoted are pre-tax. Libyan income tax, calculated on a monthly basis can be quite

considerable: the first 150 Libyan dinars is taxed at 8 per cent, though married staff are zero-rated for the first LD75 of this; the next LD100 at 10 per cent; thereafter, the rate rises by 5 per cent per LD150 until LD700, where the rate is 35 per cent. In addition everyone must pay the 3 per cent Jihad (Holy War) tax and stamp duty of LD1 per month. A monthly income of £1,900 is really equivalent to £1,450 at current conversion rates and this is subject to a further deduction in the shape of an annual super tax of 15 per cent on any real income above LD4,000 (roughly £8,675) a year.

No mention is made in advertisements of the length of annual holidays. During the holiday periods, the housing and desert allowances (which have been calculated into the "gross annual emoluments" as if they were payable on a 12 month year basis) are not paid which means that the monthly income will be further reduced by approximately £550 during holiday periods (based on the monthly figure of £1,900 quoted above). Altogether, the effect is to turn a theoretical income of £26,600 into a real income of £17,150 including the two month a year gratuity, which is payable only at the very end of the contract period.

Two further considerations may temper what might still seem a tempting figure: namely the question of how much income can be expected in the form of hard currency; and what sort of conditions one might be expected to face in order to earn that sum. Academic staff had long been accustomed to exporting 90 per cent of their earnings in dollars or pounds; this was one of the many inducements offered. However, the 1983 advertisements failed to mention a figure and staff in some institutes are now being allowed to export only 60 per cent of their salaries. Whether this ruling will be as universal remains to be seen but the reluctance of more recent advertising may be significant.

Since the spring, two incidents have illustrated the underlying trend in the institutes. First, a British technician at Brack has been deprived of his terminal gratuity after five years of service. Secondly, the housing allowance has been discontinued at Bani Walid, leaving married staff LD80 (approximately £120) worse off every month during residence.

The desert allowance mentioned above is intended as some reward for

enduring arduous conditions for considerable periods of time. Oil or construction workers operating in similar desert environments would be horrified at the prospect of the ten and a half months on/one and a half months off system that is expected of academic staff.

The institutes have been located in underdeveloped regions close to desert townships as part of a policy of rural development. The climate is harsh with extreme heat in the summer, very little rainfall and strong, sand-laden winds in spring and autumn. Possibilities for recreation or a change of scenery are extremely limited. The prefabricated buildings are near the end of their projected life and water and electricity supplies are over-loaded and subject to frequent and lengthy malfunctions.

Shopping is difficult, expensive and time-consuming process and a varied diet is hard to arrange, and there are shortages of all but the most basic foodstuff. Staff arrange schooling on a self-help basis for the younger age-groups but parents are forced to tutor older children in the home. The banking system is chaotic and unreliable, largely because of a lack of suitably-qualified personnel. A hard currency draft cheque may take over a month to obtain and even withdrawal can involve long waits in overcrowded, unpleasant conditions.

Academic organization leaves much to be desired. Term begins when enough students have drifted in and finishes at a date announced approximately two weeks beforehand by the ministry of higher education. Administrative personnel are generally young, inexperienced, indifferently educated and inclined to create crises through failure to establish routine procedures. New books and equipment are frequently ordered but never seen to arrive.

Teaching staff are often superbly qualified, but they tend increasingly to be drawn from the poorer countries of the world and are consequently prepared to accept appalling working and living conditions in order to avail themselves of the opportunity of earning many times more than they can at home. Turnover of academic and administrative staff is very high.

By western standards, the student body wields an enormous amount of power. The students are able to get rid of unpopular staff up to and including the highest administrative and academic levels and to put pressure on others by the mere threat of what they could do. They tend to control the level of difficulty of their courses by restricting the amount of syllabus material that lecturers are able to cover, using an impressive range of diversionary manoeuvres. There is consequently, a widening gap between impressive syllabuses and well-qualified staff on the one hand and actual student performance levels on the other.

To sum up, Libya is a rapidly-changing country, but one where the expatriate academic should not expect to find the sort of warm welcome that developing countries frequently offer. The reasons for this may be sought in an examination of Libyan history, particularly in the Libyan people's unfortunate experience at the hands of Mussolini, and in their subsequent reaction to those experiences. Such matters lie beyond the scope of this article. Suffice to say, for whatever reasons, the Libyan higher institutes are chaotic and somewhat frightening places in which to work and that anyone considering any advertised post in future would do well to be aware of this.

Professional interests deepen

Sinclair Goodlad raises some questions about one of higher education's 'growth industries'

Interest in the professions is as buoyant as ever. Often, this interest is expressed as criticism: of architects who design buildings so badly that bits fall off; of dentists who seem keener to drill and fill them than to promote preventative measures; of engineers and scientists whose cumbersome professional organizations seem unable to adjust to the speed of change demanded in information technology or bioengineering; of solicitors who are accused of restrictive practices (for example in conveyancing); of social workers whose byzantine bureaucracies let babies die; of university teachers who seem more interested in their research than their students. Is the education of intending professionals to blame for the deficiencies of professional practice?

Despite the flak that goes up from the public, more and more occupations seem to want to become professions and to engage in forms of higher education that seem to further their cause. In the United Kingdom alone, over 100 professional bodies are now associated with educational programmes offered by the universities, polytechnics, and colleges. If professional education is indeed at the root of deficiencies in practice, and at a time when the educational system is being reassessed, (in terms of flexibility, accountability, and responsiveness), who should control what is done by whom? This year's annual conference of the Society for Research into Higher Education will provide a wide-ranging review of this important subject.

Research on professional education is also a growth industry. A modest probing of a few data bases in Palo Alto revealed over 55,000 items published on various aspects of the subject in the last 20 years. How can one find one's way through the jungle? To limit the initial field of discourse, a book of preparatory papers has been written, *Education for the Professions: Quis Goodlad?* This illustrates major themes in education for the occupations of engineering, medicine, and management (which between them throw up most of the key issues in education for the professions). It will be provided free to those attending the conference and will provide the focus for an inquiry, in which participants (whether from professional bodies or from educational institutions) can offer contributions before a guest panel (Ernest Boyer, Sheila Browne, Thomas Platt, and Martin Trow) who will assess the ideas presented, and who will comment on what research

may be needed and what action is indicated as a result of research already carried out. Specially invited "scouts" or "agents provocateurs" will scour the paper sessions and informal meetings to bring ideas back to the inquiry.

Although the types of technical knowledge professed seem almost limitless, there are a number of important issues which will provide common ground for debate between representatives of established professions, "semi-professions" and would-be professions.

How may a greater flexibility of access to the professions be achieved compatible with efficiency and effectiveness of education to be given and the maintenance of public confidence in professional services? Is there at present an equitable distribution by sex, social class, ethnicity, etc. of those who are admitted to education for the professions and to subsequent practice? If access is inequitable, is there a case for "positive discrimination", and if so, of what sort? Is there, for example, a case for ensuring that grade-for-grade, more applicants from working-class or ethnic minority backgrounds are admitted than applicants from those groups at present over-represented? How valid or fair is the use of GCE A Levels in selection for education to the professions? Should we encourage a wider choice of entry criteria?

How, through the design of curricula and the use of appropriate teaching methods, may intending professionals develop their professional competence and simultaneously receive a liberal education? How many curricula and teaching methods best accommodate the ever-increasing volume of material which is desirable for professionals to know?

What obstacles (if any) prevent problem-based learning from being more widely used in education for the professions? What other techniques have been found to be effective in linking theory and practice in education for the professions? How, for example, is informal (or "osmotic") learning from placements, sandwich courses, internships, service, etc. assimilated into the curriculum? How is it assessed? How do institutions of higher education and/or professional bodies prevent the "academicization" of learning?

If appropriate arrangements could be made for "focussing" studies (projects, dissertations, internships, study service, problem-based curricula,



More and more occupations seem to want to become professions

undergraduate research opportunities, etc.) to give insight into the concerns of professions, could a case be made for alternative arrangements of initial and continuing education? For example, would a two-plus two pattern of studies be suitable for some professions? What differences would be made to curricula and teaching methods in initial education for the professions if continuing education, systematically undertaken and equitably financed over an individual's lifetime, were to be assumed?

How may the mechanisms of accreditation and validation of education for the professions be based on appropriate evaluation of learning, and how may assessment measure essential professional competencies? How may prior (experiential) learning be assessed for entry to professions at various possible levels of the educational process?

Is there any evidence that the influence of professional bodies discourages innovation and initiative in education for the professions? Do accreditation and validation procedures genuinely reflect what professionals actually do? (Or do they, for example, place excessive emphasis on memorization of facts rather than the exercise of skills?) Once qualifying associations have

been empowered to grant licences to practise, are they adequately responsive to changing circumstances (public expectations, advances in theory, exigencies of practice)? If not, what can and should be done? Should there, for example, be state-funded "performance standards review organizations"? Is there a case, for example, a Privy Council inspectorate to ensure principles of good practice in professions and to prevent ossification? What are the best ways of maintaining both high standards and flexibility in professional accreditation procedures?

What are the most appropriate arrangements for continuing education for the professions, and how may these be suitably integrated with initial education?

Is there a case for relicensing in any professions? If so, how should this be done? Should more professions follow the accountants, surveyors, planners and others in requiring regular professional updating? If so, how should the updating be arranged and by whom? Who should pay? Does, for example, the Manpower Services Commission have a (funding, facilitating) role to play?

If a distinction can be made between awareness, updating, upgrading, and practitioners' courses in education for

the professions, what are the best methods for achieving the objects of each? What arrangements, for example, can specific professions contemplate for optimizing the use of the Open University, the Open Tech, universities, polytechnics, professional associations, etc? Can continuing education be effectively combined with other professional purposes — for example, a regular audit of the achievements of an organization or career development of corporate strategy?

What arrangements can be made to permit and encourage career change, retraining, and credit transfer (of professional and/or academic recognition) from one profession to another, or from one level of practice in an occupation to another (that is, technician to engineer)? Who should be responsible for inter-professional training — to help professions to understand and work with each other, or to stimulate growth in new areas such as information technology? How may employers of professionals best influence the form and content of continuing education courses to ensure that courses are available to meet changing demands? What release policies should employers operate to permit and encourage professional updating? Is any legislation by government required in this area?

Is there a case for the creation of a staff college for professional educators for the professions based, for example, on departments of higher education in universities? Where might "architects" of professional education come from? Is there now a case for the creation of more professors of professional education — (professors of engineering education, medical education, social work education, etc) — possibly on short-term contracts? How should the performance of any such appointees be judged if publications come to have less salience?

Why do occupations wish to become professions? If the motivation of practitioners is idealistic (concerned with offering service rather than with securing personal status, power, wealth, etc), when and where can (or should) the moral basis of this idealism be examined and/or nourished?

Is the direct intervention of government in quality-control in the professions (or occupations aspiring to professional status) politically acceptable? If not, how should quality (of service to the public) be secured?

How can professions avoid ossification? How, for example, can the range of their interests be continuously reviewed and refreshed — extending, perhaps, to political action in favour of people not well provided for by existing social arrangements?

It is possible that some of the most fruitful discussion about these questions will take place in the "fringe conference" of informal meetings which is being vigorously encouraged by the conference committee. But the 60 or so papers and workshops should stir up ideas; the inquiry, it is hoped, will identify a few major themes for exploration — and, one hopes, for action.

The author is senior lecturer in humanities at Imperial College, London.

Stuck between east and west

Libya occupies a curious geopolitical position. Not quite African, outside the Arab heartland, on the fringes of the European sphere; midway between west and east, an implacable hostility for the one tempered by a political system too heterodox for the other.

Gaddafi's "green" synthesis calls for an abolition of state and government, popular sovereignty under the kind of one party hegemony (an echo of tribal dominance) established by Robert Mugabe in Zimbabwe, and a rigorous programme of self-development. His solution of the problem of democracy is founded on the belief (inspired through Rousseau) that representative systems are repressive in so far as they diminish the sovereignty of the individual. Such an ideal has little to do with western individualism or liberalism. While some of the socio-political premises do undoubtedly apply, Libya's economic problems are no individual and specific to its geographical position and past history that only a unique local solution could apply. That has been the task of Gaddafi's ideological cadres and advisers.

Gaddafi's yoking of socialism with personal sovereignty precisely reflects the history and traditions of his country, the three independent

the Arab Bedouin self-image combined with the absolute authority of the tribe.

The whole Libyan polity — its economic, social, military and educational apparatus — is founded on that apparently paradoxical combination of modernity and tribalism.

The Green Book, Gaddafi's master-plan for the new state, is a curious document. As a piece of political analysis it is almost impossibly naive, laden with contradictions. As a practical "greenprint" for progress, however, it is precisely in keeping with the needs of the country and, incidentally, with the highly rhetorical discussion and debate which is the prevailing currency there. Terms like "dialectic" or "consensus" do not seem to apply.

Libya remains the modern political enigma, all the more puzzling for being relatively so close at hand. It is a polity based on social and philosophical suppositions far removed from either western liberalism or eastern collectivism. Only an attempt to see Gaddafi and modern Libya in the context of the country's own history will get us past the incomprehension and fear that the name now

By western standards, the student body wields an enormous amount of power. The students are able to get rid of unpopular staff up to and including the highest administrative and academic levels and to put pressure on others by the mere threat of what they could do. They tend to control the level of difficulty of their courses by restricting the amount of syllabus material that lecturers are able to cover, using an impressive range of diversionary manoeuvres. There is consequently, a widening gap between impressive syllabuses and well-qualified staff on the one hand and actual student performance levels on the other.

To sum up, Libya is a rapidly-changing country, but one where the expatriate academic should not expect to find the sort of warm welcome that developing countries frequently offer. The reasons for this may be sought in an examination of Libyan history, particularly in the Libyan people's unfortunate experience at the hands of Mussolini, and in their subsequent reaction to those experiences. Such matters lie beyond the scope of this article. Suffice to say, for whatever reasons, the Libyan higher institutes are chaotic and somewhat frightening places in which to work and that anyone considering any advertised post in future would do well to be aware of this.

Time for rebellion in the ranks

If we take the confines of this structure at its own valuation, not because it is "cheap", we might refer to an existing member of the senior lecturer grade as a *de jure* senior lecturer. Then we would define a *de facto* senior lecturer as one who has been lecturing for 12 years after the probationary period, and who is good at it. There is, of course, a problem in deciding whether an individual is "good at it" or not, but at least we have a starting point for discussion.

Presumably, there is a certain level of competence apparent to enable an individual to pass the probation hurdle, but I mean to imply something more than just that minimum level of competence, enhanced as it would be by a dozen years of practice and experience. In the description "good at it", the 12 year period is important for it would normally bring the lecturer to a stage in his career when he is 40 plus and close to the top of lecturer pay scale.

Of the three matters usually taken into account as criteria for progression to *de jure* seniority: (i) administrative ability (ii) research output, (iii) teaching ability; and third is by far the most difficult to measure. That is not to say that there are not gross inaccuracies in the assessment of the first two,

but the acknowledged difficulty of measuring teaching ability is usually taken as an excuse not to measure it at all.

The existence of the administrative ability criteria is based on the fact that academics take a large part in managing their own enterprise. Of course, there are major administrative roles in a university: vice-chancellor, registrar, dean, departmental chairman. The lesser administrative roles have a contribution to make to the smooth and effective running of courses and the development of curricula and to the chairing of departmental and faculty committees; these abilities are not irrelevant to the running of a university, but they do not constitute a criterion by which advancement should be outweighed those based on teaching and research ability.

As for the relative merits of the latter qualities, it is commonly held that "obviously" research ability is paramount. That view, probably begun by the least competent teachers and parroted by superficial minds, bears little examination. Advanced study, participation in seminars, perhaps the odd paper or book, these are certainly attributes of the good teacher; but the transmission of existing knowledge and existing procedures is an essential

prerequisite if the recipient student is either to practice within the bounds of a discipline or to explore at its periphery: that transmission is called "teaching". To laud the research role above that of teaching is glib but thoughtless, like saying of the world of music "don't bother me with your von Karajans, where are your von Beethovens?"

The implication so far is that we should remove the *de facto* label from those that deserve it and accept the "good at it" teachers as *de jure* senior. In addition reader and senior lecturer should be equally valued grades.

The title of professor is an anomaly: it harks back to the 1920s and 1930s without having kept its significance; it should be made universal. It is a strange but incontrovertible fact that, however able academics are, they seem to be constrained, like other herds, to allow themselves to be arranged into minor hierarchies and subhierarchies. Hence the self-imposed note that is usually attached to the title "professor" in this country; yet the label has little of the same connotation in the USA.

Predictably, though, everyone in the academic world suffers from this ache for hierarchy, for it is not true that the existing career structure in universities

is the "cheap" answer to a question of esteem? After all, it is not a method by which our "cheap" nation can take some of its finest intellects, get them to do important work and then, by a network of little traps and bonds, underpay them and hold them in little esteem?

At whose door can we lay the blame? Certainly successive governments for the entirely anomalous way (two negotiating committees, but the one in which they ultimately decide remuneration and career structure. University Grants Committee, Committee of Vice-Chancellors and Principals and individual university managements, because none of these bodies has the slightest concept of the doctrine of "the good employer".

There is an adventurous way forward: it is to have a two grade structure for university academics; half of the profession would be categorized as associate professor, the other half professor. The title professor would be reserved for the leaders of the profession, leading teachers or researchers; associate professor would be a follower, but a competent practitioner as well.

A. G. Briginshaw

The author is lecturer in mathematics at City University.

BOOKS

Something to look forward to

by Philip Hobsbaum

Mr Noon
by D. H. Lawrence
edited by Lindeth Vasey
Cambridge University Press, £12.95
ISBN 0 521 25251 2

Lawrence aficionados have suspected for some time the existence of an unpublished novel. Twelve chapters forming a section of this work were published in a posthumous collection of stories, *A Modern Lover* (1934), and Harry T. Moore suggested in *The Intelligent Heart* (1955) that these chapters were only part of a much larger narrative.

This larger narrative is at last issued as the latest volume of the Cambridge D. H. Lawrence. It reprints the section of *Mr Noon* already published and brings out for the first time the chapters that were missing. These latter comprise about two thirds of the whole.

Lindeth Vasey proves to be an authoritative editor, and her introduction to this volume is full of information. She tells us that Lawrence wrote *Mr Noon* between May 1920 and February 1921, a period when he was based in Sicily. The work was started within two days of finishing his sixth novel to be published, *The Lost Girl*, and continued concurrently with what was to be his seventh, *Aaron's Rod*. However, the latter may have inhibited his progress with *Mr Noon*. Though the unpublished novel reached more than 120,000 words in length, it was never finished.

A further hindrance to completion may have been Lawrence's plan to issue the first section, the one we already know, as a separate tale. It was sent to the British publisher, Morris Secker, who praised its quality of writing but thought the work too short for publication on its own. The typescript was returned to Lawrence's then agent, Curtis Brown, and it is from this text that the chapters printed in *A Modern Lover* were prepared.

The American publisher, Thomas Seizler, had also been approached, this time with regard to the whole novel. In fact, he signed an agreement to bring it out before he even saw the manuscript. But when *Mr Noon* arrived, probably in March 1922, Seizler thought it too outspoken. Though he refused to handle the book, he did not, in spite of repeated requests, return the manuscript. Rather he added to the confusion, in 1925, by going bankrupt. The manuscript seems temporarily to have vanished in a general dispersal of Seizler's effects. It passed from one private owner to another, and surfaced only in 1972 when sold by auction to the Humanities Research Center of the University of Texas at Austin. This is the manuscript that forms the base-text for the latter two thirds of *Mr Noon*.

The earlier chapters, those already published in *A Modern Lover*, have only a tenuous connexion with what comes later. They tell of a provincial philanderer superficially derived from Lawrence's boyhood friend, George Henry Neville. He becomes involved with a local girl who is already engaged to another young man. Her outraged father writes to the governing body of the technical school where Mr Noon teaches science. There is a row, and Noon resigns his post.

The central character here presented is introverted in semblance but lacks any convincing inner life. Only in his fondness for petting and "spooning" does he resemble the historical G. H. Neville. That figure, to judge from his memoirs, was a kind of poor man's Lawrence, self-consciously red-blooded. But, crude as his prose is, it rings out with far greater conviction than anything Lawrence puts into the mouth of Mr Noon, at least in this Derbyshire phase. In these early chapters he exudes mostly a sterile didacticism. "Life is incompatible with perfection, or with infinity, or with eternity. You've got to turn to mathematics, or to art." This is bad, not because it fails to echo G. H. Neville, but because it gives no sense of any living voice whatever. Further, Noon's speeches, like those of the other characters in these early chapters, are overwhelmed by the author's arch and facetious commentary. "The cow in this vol. having jumped over the moon, in the next the dish, dear reader, shall run away with the spoon. Scandalous for the fork. Which is something to look forward to."

The tone is deplorable, but the inference is correct. The remaining section of *Mr Noon* is genuinely something to look forward to. Indeed, these later chapters are only nominally part of the same work. Gilbert Noon has left his Derbyshire town and we now find him in Germany. But his character has changed from the caricature of the husky Neville to a portrayal of Lawrence himself at a highly sensitive point of his career.

The hitherto unpublished section of *Mr Noon* narrates Lawrence's elopement with Frieda and their wandering through Germany and Austria and down into Italy. This journey, done mostly on foot, took place between May and September, 1912. It is the raw material for the much-admired sequence of poems, *Look! We Have Come Through!*, published in 1917. There are further parallels in such early sketches as "A Chapel and a Hay" and "Among the Mountains", "German Impressions" and "Christ in the Tirol". These familiar pieces assume a greater degree of colour and life in the reifying context of narrative.

One of the abiding themes in *Mr Noon*, as in *Look! We Have Come Through!*, is a doubt in the mind of the protagonist concerning the Frieda-



Lawrence in 1920, the year he wrote "Mr Noon".

figure - called, in the novel, Johanna. He fears that she will be drawn back to her home and children before their passion has developed into a relationship. The feeling is explicit in such poems as "She Looks Back", "Mutilation" and, most intensely, "In the Dark".

A blot of pallor sits beneath the high square picture-dusk, the window of dark sky.

A sound subdued in the darkness: tears! As if a bird in difficulty up the valley steers.

"Why have you gone to the window? Why don't you sleep? How you have wakened me! - But why, why do you weep . . . ?" Fine poem though this is, the prose equivalent in *Mr Noon* is more subtly and, most intensely, "In the Dark".

Two nights after this he awoke again with a start. He felt at once that Johanna was not at his side. In the same instant he heard a low, muffled sound that seemed to shatter his heart.

He sat up. There was a white blotch beneath the low window. It

was Johanna crouching there, sobbing. "What is it? Why are you there?" "Nothing," she sobbed. "Why have you got up? You'll be cold." "Oh no - oh no -" she sobbed. "But what's the matter? Come back to bed." "No - No - no-ol!" she sobbed muddledly.

The night and the dark room seemed to bristle with the sound. The lyrical intensity of the poem seems here to be wholly absorbed into the prose. At the same time, the language of the latter appears to be self-regarding - more detached, more dramatic. The pain is actualized through the way in which the woman's responses acknowledge yet do not answer the bewildered questions of the man. An autobiographical presence is palpable, but, even so, we are less aware of the protagonists as Lawrence and Frieda than of their personalities as Noon and Johanna.

Fortunately, all is not at this pitch of intensity. The novel has its comic moments. Some of these are already known to us in the form of prose sketches, but they seem better humoured in the context of plot and character provided by the novel. "The Hay Hunt among the Mountains" is a sketch that recalls an uncomfortable night, and it has its equivalent in *Mr Noon* - "a wistcoat is a bad pillow. You find your face in the arm-holes every other minute . . .". This is not, however, a misfortune occurring in a two-well-known characterless travels but an episode involving Noon and Johanna in mid-journey.

Of course one must not claim, even for these Tyrolean chapters, more than is their due. While the authorial interpolations are less facetious than those of the Derbyshire chapters, they still tend to disturb the narrative tone. Further, when the two sets of chapters are added together, *Mr Noon* in aggregate cannot be seen as a classic. It is too bifurcated, too disparate in tone and character.

Once this qualification has been made, though, *Mr Noon* remains one of Lawrence's happier novels. The lovers eventually arrive, and not only in a topographical sense.

Gilbert and Johanna would buy lunch, and go into the old grove of olives above the shore . . . watching the lake glitter, and feeling the mellowness of the world . . . Why have problems!

The novel is perhaps best read as a prose version of *Look! We Have Come Through!*, and it will not suffer at every turn from the comparison. Alternatively, now that *Mr Noon* is at last retrieved, we can take it as a Lawrencean *Love Labours Wonne*.

Philip Hobsbaum is reader in English literature at the University of Glasgow.

The Great Debate: NAB advice

Adapting to a changing world

A joint statement from the University Grants Committee and the National Advisory Body

More than 20 years ago, the Robbins Committee identified four objectives essential to the higher education system. These it described as instruction in skills; promotion of the general powers of the mind; the advancement of learning; and the transmission of a common culture and common standards of citizenship. The meaning given to some of these terms and the extent in which they might apply have changed since the time of the Robbins report. Nevertheless, we, the University Grants Committee and the National Advisory Body, believe they form an appropriate basis for considering the present and future role of higher education in our society.

Providing instruction in skills and promoting the powers of the mind remain the main teaching purposes of higher education. In carrying out this role, higher education attempts to meet both the needs of the economy for highly skilled manpower and the aspirations of individuals for an educational experience which will provide for personal development and lead to a fulfilling and rewarding career. The faster pace of scientific, technological and economic change which our society now experiences has implications for the types of skill which higher education attempts to inculcate.

Specific knowledge quickly becomes outdated and the context in which it is applied rapidly changes. Initial higher education, particularly at diploma and first degree level, should therefore emphasize underlying intellectual, scientific and technological principles rather than provide too narrow a specialist knowledge. The abilities most valued in industrial, commercial and professional life as well as in public administration are the transferable intellectual and personal skills. These include the ability to analyse complex issues, to identify the core of a problem and the means of solving it, to synthesize and integrate disparate elements, to clarify values, to make effective use of numerical and other information, to work cooperatively and constructively with others, and, above all perhaps, to communicate clearly both orally and in writing. A higher education system which provides its students with these skills in serving society well.

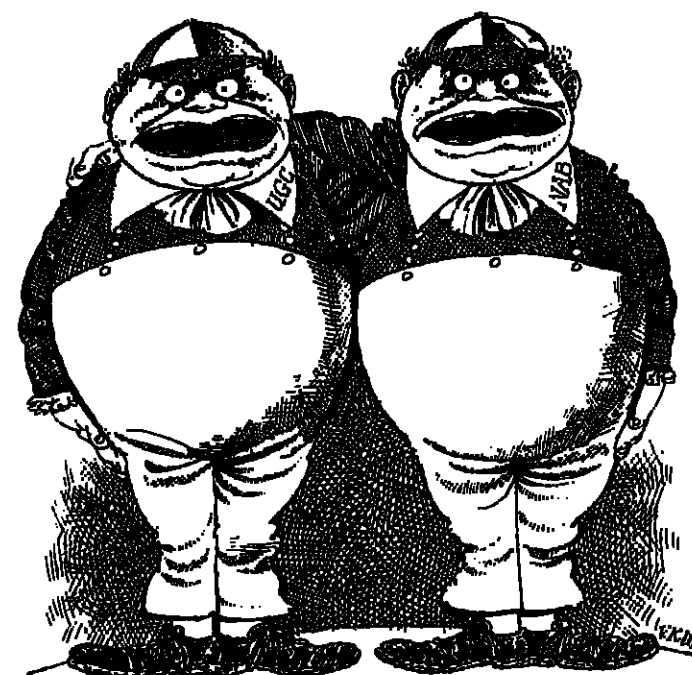
The world has changed since Robbins reported. The focus of initial higher education must now be broader and the recent increased emphasis on continuing education should be maintained and accelerated. Many commentators have written about a new industrial revolution, based on information technology, biotechnology and other scientific advances. The need for updating, refreshment and reorientation and for the development of new skills and attitudes is more pervasive and in a sense more mundane. It affects, for example, the professions seeking to cope not only with technological advance, but also with changes in their legislative and regulatory frameworks; management and trades unions seeking to understand and adapt to their changing social and economic environment; those in the public services absorbing new ideas on the orientation and organization of their work; and the unemployed seeking to reenter the labour market in new fields of employment.

Continuing education needs to be fostered not only for its essential role in promoting economic prosperity but also for its contribution to personal development and social progress. It can renew personal confidence, regenerate the human spirit and restore a sense of purpose to people's lives through the cultivation of new interests. In short, both effective economic performance and harmonious social relationships depend on our ability to deal successfully with the changes and uncertainties which are now ever-present in our personal and working lives. That is the primary role which we see for continuing education.

We have considered whether this increased emphasis on continuing education should be seen as a reinterpretation of Robbins's first two objectives or as a new objective. In view of the importance we attach to continuing education, we see merit in emphasizing the establishment of a new objective rather than simply reinterpreting those enumerated over 20 years ago. This we would define as the provision of continuing education in order to facilitate adjustment to technological, economic and social change and to meet individual needs for personal development.

In concentrating on the teaching functions of higher education, the Robbins Committee's first two objectives answer in part of the question "What is higher education for?" They do not answer the question "Who is higher education for?" The approach of the Robbins Committee to this question was enshrined in the famous axiom that courses of higher education should be available for all those who are qualified by ability and attainment to pursue them and who wish to do so. This has been the guiding principle of higher education planning for the past two decades.

We reaffirm the importance of access and the provision of opportunity. However, the Robbins axiom should be interpreted as broadly as possible,



particularly in relation to the term "qualified". Essentially a student's qualification is used to form a judgment on his or her ability to benefit from a course. Yet evidence shows that school examinations such as A Levels are not always good predictors of achievement in higher education and that other qualities and experience can be important determinants of success. We believe that the Robbins axiom is more approximately restated thus: courses of higher education should be available for all those who are able to benefit from them and who wish to do so.

The third objective of the Robbins Committee refers to the advancement of learning. The extension and application of knowledge are at the heart of the educational process; indeed, that process is itself most vital when it partakes of the nature of discovery. Moreover, through its research activity, higher education makes a major contribution to the continuing health of the nation's industry and commerce. To curtail research would in the long run impoverish the nation materially as well as culturally.

The language of Robbins's final objective - the transmission of a common culture and common standards of citizenship - may seem somewhat dated nowadays when so much emphasis is placed on the contribution which diverse cultures can make to the vitality and strength of our society. Yet it is still true that there are common values which education seeks to transmit and which help to give society its cohesion and stability. These include the need to protect the free expression and the testing of ideas, and the examination of cases and arguments on their merits. In this sense the objective is even more relevant in today's multicultural society than it was 20 years ago. The Robbins Committee's own elaboration of the objective indicates that the sentiments

which underlie it still apply today: "This function, important at all times, is perhaps especially important in an age that has set for itself the ideal of equality of opportunity. It is not merely by providing places for students from all classes that this ideal will be achieved, but also by providing, in the atmosphere of the institutions in which the students live and work, influences that in some measure compensate for any inequalities of home background. These influences are not limited to the student population. Universities and colleges have an important role to play in the general cultural life of the communities in which they are situated."

The principle of access which we reaffirmed and reformulated above is concerned with providing places for students from different backgrounds and attempting to compensate for previous inequalities. We would broaden it and include students not only from different social classes, but also from different ethnic groups. Moreover, opportunities for women must be as good as opportunities for men. The principle is also concerned with the relationship between each institution and its locality. It is as important as ever that institutions should contribute to the cultural life of their communities. In the world of the 1980s, it is equally important to contribute to the economic, industrial and commercial life of the locality.

A longer-term strategy must build on the strengths of the two sectors of higher education and must maintain the present diversity of provision. Full-time first degree courses will continue to be a major activity of both universities and major public sector institutions. Although most subjects of study are available in both sectors, we do not consider that there is any general problem of duplication in view of the spread of institutions and of differences in the structure of courses and in the students attracted to them. Areas of excessive or inadequate provision will need to be considered by both sides of higher education together; so far as England is concerned, we intend to do it jointly. We would expect the universities to continue to be responsible for the bulk of postgraduate provision, particularly full-time courses and post-graduate work designed to prepare students for careers in research. The public sector should continue to provide the bulk of non-degree courses and of part-time courses. But where there is clear evidence of demand, institutions in either sector should not be prevented from introducing courses which arise from and are connected to their existing offerings.

For the public sector, continuing education has always been as important as the education of school-leavers. Universities have varied very much in their involvement. The expansion of continuing education which we believe to be necessary will offer a challenge to both sectors and should be based on their different experience and strengths. It must take account of the contribution of the Open University. The general leadership of the universities in research work is recognized and reflected in the funding arrangements for the two sectors, but we agree that there is a legitimate research role for major public sector institutions, both to support and sustain teaching and as a contribution to the advancement and application of knowledge.

The principle of accountability in public sector higher education should be reaffirmed and exercised through control over key academic, administrative and resource issues; institutions should be allowed the maximum possible freedom to manage their own affairs within the framework of their articles of government. Further progress towards the integrated planning of higher education is imperative: the links between ourselves and the UGC must develop as a contribution to this end.

Analysis by Peter Scott

Recipe for success

The provision of continuing education should be accepted as a major objective of higher education.

"Ability to benefit" should be the dominant criterion for entry to higher education.

Planning to meet the future demand for higher education should be based on a level well above that of the low variant in *Report on Education 100*, and should reflect fully provision for increased participation by women, by those without standard entry qualifications, by mature entrants, and by those whose needs are best met by part-time courses.

Student numbers in the public sector should not be planned to fall significantly below present levels for the rest of the century.

More diverse patterns of provision and more flexible entry into higher education are needed; general courses of higher education at the higher diploma level must be encouraged; and increased provision of *Business and Technician Education Council* higher diplomas and certificates supported.

A system of external quality assurance of courses based on peer group assessment must be retained.

There is no practical scope within public sector higher education for a further reduction in the average level of the unit of resource; on the contrary, additional resources will be needed too:

- accommodate increased demand;
- provide adequately for the updating of teaching staff and/or for the provision of some "new blood";
- provide suitable, properly maintained premises;
- finance a major initiative in respect of equipment;
- support the development of continuing education, and stimulate innovation;
- provide selective support for research.

A common unit of resource for teaching purposes should be accepted as the policy basis underlying the future allocation of funds to the sectors of higher education.

The principle of accountability in public sector higher education should be reaffirmed and exercised through control over key academic, administrative and resource issues; institutions should be allowed the maximum possible freedom to manage their own affairs within the framework of their articles of government.

Further progress towards the integrated planning of higher education is imperative: the links between ourselves and the UGC must develop as a contribution to this end.

Images of the good landlord

The Country House Ethos in English Literature 1688-1750: themes of personal retreat and national expansion.
by Virginia C. Kenny
Harvester, £28.50
ISBN 0 7108 0670 1

The country house poem, which established itself as a literary genre in the seventeenth century, has a Janus quality. On the one side it follows Horace's praise of his Sabine farm in expressing the individual desire for peace, independence and escape from the pressures of the city, a longing intensified by the increasing uncertainties of the times. Ben Jonson's "To Penshurst", for example, indulges in a nostalgic vision of a prelapsarian golden age, a land of Cockayne where the fruits bend down to be plucked and the "painted partridge" offers itself willingly for the table.

On the other side, however, the country house by its very nature has a social dimension: it is associated with specific noble governing families, the Sidneys or the Fairfaxs, and is more sensitive than the Arcadian pastoral, therefore, to changes in the ideology and the society of the world outside. The country-house poem is an especially interesting form because it is the place where profoundly opposing impulses confront each other and demand to be reconciled - the claims of the contemplative and the active life, the tensions between private and public, individual and social needs.

Virginia Kenny's book traces the development and modification of the country-house ethic up to 1750. Marvell's classic poem "Upon Appleton House" reveals the conflict between public and private in its most acute form at the end of the civil war: the appeal of idyllic retreat into the green woods is described in military imagery, which does not let us forget the civil broils outside - "How safe, methinks, how strong behind these trees have I encamped my mind." - and even the flowers in the garden are on parade. By the end of the century, however, the political situation has changed and the country-house idyll with it. Peace is established at home, victory and commerce abroad; and as a result of the

new prosperity the great men of the city are acquiring country estates and carrying to them something of the commercial ethic of frugality, good management and profit which had made them wealthy. In the *Spectator* Sir Andrew Freeport retires to a country estate and becomes a new-style landlord in contrast to the traditional feudalism of Sir Roger de Coverley.

The new country-house ethos shows a greater consciousness of the importance of the land as the basis of the social pile and of the duty of the landlord to bring nature's fertility to proper fruition. Retirement to the country from being an escape becomes a state of active if retired benevolence, and the Georgic replaces the pastoral idyll as its characteristic mode. Such an ethos is useful for many different purposes, and Virginia Kenny illustrates the varied and often unexpected contexts in which it appears. When in *Robinson Crusoe*, for example, Defoe sets about building up a social ethic from first principles, what emerges is basically that of the country house with its estate to proper use and reinforcing nature's fertility by art. Pope makes the same point. In his *Moral Essays* contrasting Britain's and Africa's

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world, namely, that of the good landlord who helps backward peoples to make proper use of nature's plenty and spreads order and civilization with commerce. Virginia Kenny traces this theme through Thomson's *Seasons*. The consistency with which commerce is described through imagery of harvest and good husbandry shows the extent to which the new country-house ethos has, in its turn, penetrated the world of commerce by which it had originally been modified.

This is a stimulating book which asks to be taken further. How, for example, does Wordsworth's individual blend of pastoral and French Revolution values relate to what has gone before, and how does the country-house ethos accommodate the new pressures of the industrial revolution, especially in the Victorian age when the wealth of a new social class gives it fresh life? And what of the contemporary idyll of retirement to a country cottage - surely a return to the simplicities of Horace? It is to be hoped that Virginia Kenny will continue her investigations.

Maurice Evans

Maurice Evans was formerly professor of English at the University of Essex.

Student numbers assumptions are 'too pessimistic'

The NAB recommends that the planning of higher education should be based on figures well above the low variant given in *Report on Education 100*, and that student numbers in the polytechnic and colleges will not fall significantly below present levels for the rest of the century.

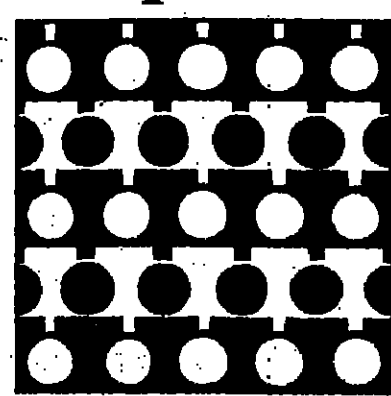
But even, the upward revision of earlier projections contained in *RoE 100* changes the planning scenario for higher education in a radical way, the NAB points out. Compared with the official figures in use at the time of its 1984 planning exercise, the total number of students in higher education is forecast to be greater, and demand is projected to decline less, and the peak is not now expected until between 1980 and 1988. So the

appropriate planning basis for the rest of the 1980s is one of stable or increasing demand. But the NAB argues that the revised projections in *RoE 100* are still too pessimistic. They do not take account of the fact that recent initiatives in the education and training of 16 to 19-year-olds may broaden higher education to a stable constituency, and are based on a static assumption about the access of women to higher education.

The report also assumes that students without the standard two A level entry qualification will remain the same proportion of students with conventional qualifications. The NAB says this may be acceptable in forecasting terms but is too conservative in planning terms. As it wishes to increase the proportion of students on diploma courses which only require

one A level, it expects additional growth in this area. Similar objections are made about the reports' assumptions about mature students of polytechnic and college students. The NAB regards the high variant forecast of mature students as much more realistic, and argues that its policy of protecting part-time courses within a new planning framework will stimulate the growth of part-time numbers.

The NAB advice also questions the assumptions made in *RoE 100* about how the total number of students might be distributed between the university and non-university sectors. This split may be not unreasonable in relation to young 18-plus entrants but "we consider them unrealistic" in respect of mature entrants unless there is



a positive move in the university sector (of which we see no signs at present) to change the nature of the provision that it makes - and hence markedly to

affect one of the key distinctions between the sectors. The NAB advice also puts considerable emphasis on manpower planning. It points out that in the 1984/85 planning exercise it deliberately set out to change the balance of provision between arts and social studies on the one hand, and science and engineering and business and professional studies on the other. Student demand had to be properly informed about the changing demands of, and for, different areas of employment.

"Manpower forecasting has a long and to some extent disreputable history, and we do not believe that it is possible to forecast with any degree of accuracy the precise future requirements of the economy overall, for qualified manpower over the next decade," the NAB concedes.

The Great Debate: NAB advice

A question of two years or three . . .

Four subjects are discussed in the chapter on the structure and organization of courses: course levels and lengths, professional bodies, approval arrangements, and short courses. The bulk of the NAB's attention is devoted to the first of these.

The arguments against a general move towards two-year degrees, an idea floated by the NAB in its earlier consultative document, are admitted to be strong and such a move is not recommended. However, within the context of a normal pattern of three-year degrees the possibility that the most able students may be able to reach the required standard after two years is not ruled out.

"A two-year degree qualification for the most able could become a prestigious award, which would be highly coveted," says the NAB paper. It argues that the introduction of such an award would be a welcome antidote to the tendency to associate prestige with the length of a course but admits that any move in this direction requires the cooperation and support of the universities.

There was much more support for a greater emphasis on two-year diploma courses in the replies to the consultative document and the NAB has



already begun to move in that direction by advising that growth in non-degree courses should be faster than in degree courses. In its advice the NAB supports both additional provision of BTEC diploma and certificate courses, suggesting that more students with two A levels should be encouraged to enrol, and of the Diploma of Higher Education.

In line with the recommended move from formal qualifications to "ability to benefit" as the major criterion for entry into higher education a more flexible approach to admission requirements is supported. In particular students with one A level should be able to enter DipHE courses. In the longer term, the NAB suggests, widening initiatives will be required. For example, students could be admitted to diploma courses on the basis of their O level results plus an assessment of work experience.

The NAB says that it would not be

appropriate to endorse any particular approach towards more liberal entry arrangements because diversity and flexibility must remain the key. But it supports recent attempts to establish a network through which educational credits can be transferred, work towards assessing prior experience for purposes of credit, the greater use of modular structures, and greater integration of certificate, diploma and degree courses.

"We support the view of our continuing education group that what is needed is not the imposition of a credit system, but the adoption by all the major validating bodies, the universities, public sector institutions and the professional bodies of the principle of credit accumulation and transfer." But it was important to ensure that different schemes were compatible.

On relations with professional bodies the NAB stresses the importance of keeping a balance between the

needs of employers, which may be for broadly educated graduates, and the demands of the professions, which may emphasize specific requirements before professional recognition is given. The professions should be encouraged to see that courses remain relevant to the practical needs of employment. The NAB also expresses concern about the pressure to lengthen professional courses.

On the approval of courses the paper endorses the more liberal approach that has been developed recently. It says that there is now general agreement that the present system of individual course approvals must be abandoned to allow institutions greater freedom to vary academic programmes. The principle of this has already been agreed but the detailed administrative arrangements through which a more relaxed scheme could operate need further consideration.

Finally the NAB endorses two key recommendations of its continuing education group on short courses—the need to identify marketing as a key concept in their provision, and the need for pump-priming on a continuing basis to be available to all institutions rather than just for one-off projects.



The root of the problem

The NAB's overriding concern is adequate funding for the polytechnic and college sector: adequacy and equity between the two sectors of higher education, not equivalence for its own sake.

"But we can see no good reason for the discrepancy in the inter-sectoral allocation of public funds, and believe that the principle of similar funding for similar work should be applied across the binary line." The NAB argues that a common unit of resource for teaching should be accepted now as the basis of future policy for the allocation of funds between university and public sectors.

Its first priority is to preserve the level in real terms. The NAB considers there is little or no practical scope for a further reduction in the average level of the unit of resource without narrowing access or threatening standards.

The achievement of a staff/student ratio of 12:1 implies a 20 per cent increase in teacher productivity. Half of this increase will have taken place by 1985/86 because of the increase in the number of students.

Its advice also expresses concern about the current state of premises and equipment. A future strategy for higher education which does not provide adequate capital resources will itself be inadequate, the NAB says. On equipment in particular a major initiative is urgently needed.

On continuing education, the NAB points out that according to its Continuing Education Group the true load of part-time courses is undervalued by the conventional conversion factors.

The advice points out that no allowance is made for research in the present pool although some estimates that between 5 and 10 per cent of the pool is actually spent on that purpose. The NAB strongly defends the role of research on the non-university sector and argues that it is vital to sustain high quality teaching.

The NAB says that although it does not consider it necessary to identify and fund all research separately it is considering the possibility of reallocating some of the existing pool into a research fund. It is also seeking additional funds of up to £20m for a similar purpose.

The NAB admits that there is still scope for the more effective use of resources within the sector and for a continuing switch from high cost institutions to those operating on the borderline of acceptable standards.

Nevertheless it presses for extra resources for six purposes: 1) to accommodate increasing student demand; 2) to help with updating of teacher and provide some "new blood"; 3) to provide up-to-date premises; 4) to pay for a major research equipment initiative; 5) to stimulate continuing education; and 6) to establish a selective research fund.

The NAB also recommends that the responsibilities and membership of the Computer Board should be extended to cover the polytechnics and colleges.

the University Grants Committee, the NAB says: "We regard further progress towards the integrated planning of higher education as imperative, and expect the links between the UGC and ourselves to develop as a contribution to that end."

"The precise shape of an integrated planning framework is more speculative than a major responsibility rests with the DES. One area in respect of which urgent action is possible is the necessary role of the funding education policy can be studied objectively and in depth."

To that end the NAB recommends that serious consideration should be given to setting up a centre for higher education management and policy studies. Together with the growing association of the NAB and the UGC such a centre would constitute a logical step forward in the capacity of the country to plan higher education effectively.

The Great Debate: UGC advice

On the shopping list . . .

Student numbers:

Provision for home initial entrants over the three years 1985/86 to 1987/88 should move progressively closer to the level of demand shown in the DES 1984 Variant X, ie to about 170,000, and should be held at that level until the end of the decade.

Full-time home postgraduates in the universities should be enabled to rise from about 31,000 in 1983/84 to about 36,000 by the end of the decade; of these 16,000 should be research students and 20,000 on taught courses.

Taking the first two together and allowing for students from abroad, including those from the European Community, numbers in higher education should rise to about 600,000 full-time and sandwich students in Great Britain.

Neither the Variant X nor the Variant Y projection is reliable for the longer term. In order to provide a sounder basis for planning for the 1990s the projections should be reconsidered and recalculated in three or four years' time. On that occasion separate projections based on the same principles should be made for Scotland.

Efforts should be made meanwhile to improve the coverage and quality of the data used for the projections.

The Education Departments and the Research Councils should seek funds to reverse the decline in the number of postgraduate research students.

There should be a minimum annual recruitment of 3.5 per cent of the total number of academic staff. This would imply at least 900 new appointments a year.

The Government should make additional funds available to enable the committee to reimburse universities with 50 per cent of the cost of compensation under the premature retirement compensation scheme.

The present machinery for the negotiation of non-clinical academic salaries should be reviewed.

The Government should at a minimum provide true level funding of recurrent grant at least until the end of the decade, which is the period for which we have made recommendations on student numbers.

The Government should introduce a longer-term planning horizon for recurrent grant.

The equipment grant should immediately be increased to the level indicated by the equipment grant model (that is, by at least 25 per cent) and should not again fall below it.

The capital grant should be held at its current value in real terms for the next two years, but should then be symbolically reviewed.

The retention limit of £100,000 on the proceeds of sale of property should be doubled. In circumstances where the committee's prior approval is required universities should be allowed to retain the entire proceeds, whatever the amount.

The committee's delegated authority should be extended so that it is able to cover all aspects of universities' capital proposals.

The Government should make an explicit statement revoking the principle of efficiency funding so as to encourage universities and potential donors.

The Government should consider changes in the tax laws which would help universities to raise more income. It should be drawn to the attention of Government departments that they should meet the full cost of the research which they commission in universities.

The Government should provide additional funds for the establishment of an industrial "seedcorn" fund. The role of the committee should remain largely unchanged.

Fighting back with a strong plea for resources

The University Grants Committee advice to the Government in its strategy for higher education into the 1990s can best be summarized as "the UGC fights back". It is a document that makes a strong plea for additional resources in a number of crucial areas, including staffing, equipment grant, continuing education and research and although it suggests minor changes for the universities, and hints at more major ones, predominantly it is a statement of need.

If in 1981 the committee saw its primary task as to make the universities change, this new document reminds the Government of its own responsibilities. It seems to say that the universities delivered in 1981 but the Government did not, particularly in near-promises of level funding and stability of planning.

Its conclusion is worth quoting at length: "The committee's aim in July 1981 was to minimize the damage to the system caused by the cuts imposed by Government. But those cuts were so severe that great harm has still been done. Academic planning has been disrupted, morale has been impaired, thousands of young people have been denied a university education, confidence in

Government has been shaken and will be difficult to restore . . .

"To secure full effectiveness and flexibility, further restructuring is necessary. New courses must be established, research must be strengthened, unsuitable and redundant buildings must be sold or demolished, full advantage must be taken of advances in technology to increase the effectiveness of teaching, staffing problems must be overcome, organization must be improved.

"It is for these purposes, not to maintain the present position, still less to restore the past, that in this advice we have pressed for adequate resources and an adequate planning horizon. Without them the prospect is of further disruption and decline."

There were 658 respondents to the UGC's questionnaire on the strategy debate. Included in this were individual replies from vice chancellors of the following universities: City, Sussex, University of Wales Institute of Science and Technology, Reading, Exeter, York, Kent, Loughborough, Surrey, Keele and Strathclyde. The Government will formally reply when it issues a green paper, now expected for January.

Analysis by Ngaio Crequer



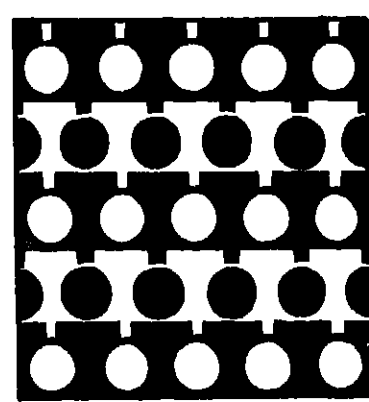
'Think again on numbers'

The UGC says that full-time and sandwich students in higher education in Great Britain (home and overseas) should rise to about 600,000 by the end of the decade. This is just slightly less than the Department of Education and Science's highest estimate (called variant X) of 612,000 just before 1990, made in the revised figures published in July this year.

Provision for home initial entrants between 1985/86 and 1987/88 should also, it says, follow the DES high estimates, and should be held at about 170,000 until the end of the decade.

But for the long term it does not accept as reliable either the higher or lower DES projection and suggest that for the 1990s they should be reconsidered and recalculated in three or four years' time. There should be separate figures for Scotland.

Uncertainties over the numbers include changes in secondary schoolings and examinations which may improve educational attainments, and changes in the social and economic climate, which may stimulate demand. The committee queries whether if the pro-



jections are realized, there will be sufficient graduates to meet national needs.

Staff planning is difficult and many employers look for graduates who, regardless of their degrees, are literate and numerate.

Demand for graduates will increase across the board, says the UGC, as the

country moves out of recession. It will not diminish just because there are fewer 18-year-olds available to meet it.

The committee rejects the DES assumption that the ratio of home postgraduates to undergraduates will not change, numbers being a matter for policy rather than projection. They want full-time home postgraduates to rise from 31,000 in 1983/84 to about 36,000 by the end of the decade and of these 16,000 should be research students and 20,000 on taught courses.

They see no lack of able students provided student maintenance is available, and this they intend to study further.

The UGC takes as a working assumption that the number of overseas students, including those from the European Community, will remain the same, at about 45,000.

They also say that of all the different projections of student numbers, the only ones they have taken account of are the latest DES figures (1984), and those of the Royal Society and the Association of University Teachers.

Why small is not beautiful

The UGC is concerned about the number of small departments. "A small department in a large subject need not be weak, provided it is selective in its interests; but we are concerned at the number of small departments that are also weak departments. We believe that in a good many subjects there will have to be fewer departments than there are now."

The UGC gives no definitions but says it has asked each of its subcommittees to make a detailed study of the issues involved in its field.

"We expect to give more advice to universities than in the past but we hope that, having done so, we shall be able to leave much of the initiative to them and that we shall only need to play an enabling role. In allocating funds we shall discriminate in favour of universities which will tackle the problem of small departments."

Universities will need to make choices between covering many subjects patchily and covering fewer subjects adequately. But those which opt to retain all those they have supported in the past will have no room for new subjects, which may be growth points in the future, the report says.

Although in some cases institutions can share teaching loads, this does not altogether solve the problem, as a lecturer will not always be readily available for consultation in her or his home institution if teaching elsewhere.

One radical way to solve the problem is merging, but here the UGC exercises a note of warning. It points out that mergers take a long time to come to fruition, during which there is much disruption.

In a section on the government and management of universities, the report says that there is now much more responsibility on council because of worsening financial guidelines. It is the university council's job to make hard decisions and ensure that choices are made and not put off.

University decisions are typically considered by a hierarchy of subcommittees, which may delay action and divert staff time. Every university should examine its decision-making machinery to ensure it is effective.

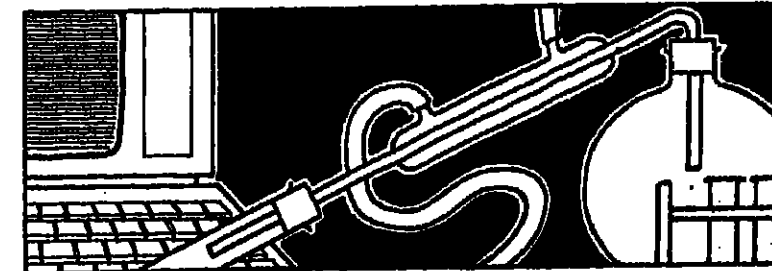
More selective approach to research planned

The UGC intends to be more selective in allocating funds for research, and universities must develop research strategies and improve their management.

Although details must be worked out with the Committee of Vice Chancellors and Principals and others, and it will only work with a longer planning horizon, universities will need to say that their research plans are and how much will be spent on particular areas of investigation.

The UGC will indicate to what extent it had taken account of these research plans, in the allocation of recurrent grant. But they will not earmark a specific portion for research, nor will they passively accept research councils' priorities and assessments.

The committee says it is just as deeply concerned for the health of research in the arts as in the sciences. It does not propose the creation of a humanities research but it intends to maintain its level of support for the arts.



It could not, within present funding levels, contemplate a switch from the arts to the sciences, it says, but the arts will be included in the new selective funding strategy.

The UGC expresses great concern at the decline in home postgraduate research students, whose numbers fell by 15 per cent between 1972 and 1982, when student numbers rose by 32 per cent. They urge funds to reverse the decline.

The UGC cannot propose any further shift in the balance from teaching to research, particularly as

student numbers are going to rise. So there must be truly level funding and a substantial increase in the equipment grant.

Almost all the respondents agreed that the dual support system is the best available for university research. "A situation which Morrison (a 1982 report on university research funding) regarded as grave before the cuts in 1981 has deteriorated further . . . If universities cannot provide the opportunities and facilities for research, they will not attract or retain the best minds," says the UGC.

Science shift should not be at the arts' expense

The UGC accepts the case for a further shift towards science and engineering subjects and has been moving in that direction since 1981. But it says that significant change can only be made if the necessary resources are available. "It is neither desirable nor feasible to find them at the expense of the arts."

It says that between 1980/81 and 1982/83, 60 per cent of graduates finding jobs went into industry and commerce. In engineering and technology the figure was 90 per cent, in the arts about 55 per cent.

It accepts that there may be shortages of graduates, particularly in some technological subjects but says universities have run down academic staff and funding in all departments to cope with the 1981 cuts. In many computer science and engineering de-



partments . . . teaching loads are now too high and levels of funding too low

Expansion of places will only be possible if more staff are recruited and industry may also need to second staff. But most graduates are employed because of their general intellectual abilities and industry will continue to need generalists and non-technical specialists.

But if industry wants people with particular qualifications it should provide training places for sandwich students and new graduates, and pay good salaries. It must improve its image with students.

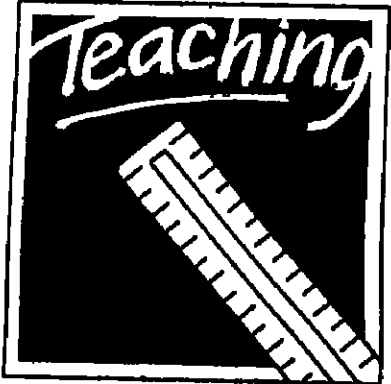
The schools should try to avoid the dangers of early specialization and emphasize the importance of a balanced curriculum. Forces within the schools tend to work against the sciences, particularly for girls. "If more girls could be persuaded to develop an interest in mathematics and physical sciences the situation could be

transformed."

Good teaching of mathematics and the natural sciences is vital, and better teachers were needed in primary and secondary schools. The UGC reports that there is little interest in conversion courses to allow school-leavers with high achievements in the arts to qualify for university courses in the sciences or engineering. Nor would this significantly increase the number of first class scientists and engineers.

But there was great potential for postgraduate level conversion courses. A number of taught masters degrees provided vocational-oriented courses for students from all disciplines and a number of information technology conversion courses now existed. But supply was limited by the financial support available to students.

Flexibility and innovation are the aims in teaching



A longer academic year, higher staff student ratios, distance learning and the impact of new technology are the subjects of the NAB's advice on teaching and learning strategies.

It accepts that many institutions in practice are already operating a longer academic year of 40, 44 or 48 years by using vacations for fieldwork or industrial experience. So no general advice is offered on this issue although "we would expect institutions to use their premises more intensively throughout the year in the future as their short course work develops."

The NAB has already said that it should be possible for the sector as a

whole to move to an average staff student ratio of 12:1 over the next few years without an unacceptable deterioration in quality. But it admits that this is not "a negligible change".

The advice says that this 20 per cent increase in teacher productivity can only be achieved by a strengthening of the teaching support base. Increased technician and other support staff will enable more expensive academic staff to be used more effectively. A greater degree of student self-learning will be required.

The NAB points out that more economic staff student ratios can be achieved by either reducing the num-

ber of hours for which students are taught or an increase in class sizes. It is more enthusiastic about the former than the latter. "Less spoonfeeding of students and more innovative approaches to greater self-learning would have educational benefits as well as making more effective use of the scarce resource of lecturers' time."

The introduction of demonstrators to the laboratory or studio practice was also possible.

Although less enthusiastic about the latter, the NAB believes there is some scope for higher classes. Classes in the same subject area but covering different courses could be amalgamated. Courses with small numbers may have to be withdrawn, although care has to be taken to offer a sufficient choice, particularly in the third year of honours degrees.

On distance learning, computer assisted learning and other open learning strategies, the NAB advice says that these new technologies and approaches can improve flexibility by throwing off the burden of the timetable, and an extra educational dimension by producing quicker and better understanding, and act as a vehicle to widen access.

But it warns against regarding new technology as a means to cut costs. The limited evidence suggests that establishing distance learning approaches can be extremely costly. Cost effective provision required integrated planning between a range of partners, the widest possible dissemination of already available material, and the careful integration of classroom and distance learning.

"This leads us to advocate closer integration between the Open University and the public sector both in national planning and the individual institutional level."

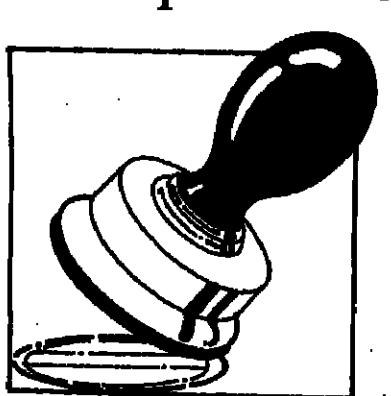
The NAB also recommends that the responsibilities and membership of the Computer Board should be extended to cover the polytechnics and colleges.

Quality of staff is 'important safeguard'

The most important safeguard of the quality of courses is the quality of the academic staff which teach them, argues the NAB in its chapter on the maintenance of standards. There is evidence that this has increased in recent years, particularly in terms of the number obtaining higher degrees, but in some high technology growth areas it is still difficult to recruit high-quality staff in competition with industry.

In a sector concerned to service professional and vocational needs staff development is particularly crucial according to the NAB. This means not only regular academic updating but "regular interaction with the areas of industry, commerce and the professions which the sectors serve."

The reduction in unit costs in recent years is likely to have had a marked effect on expenditure on staff development, although the effect on quality may not show for some time. The deficiencies appear at first slowly, but then increasingly, and eventually require a major effort to



correct. The danger is that a lack of an immediate effect will lead to a false sense of security.

The NAB advice strongly supports the Council for National Academic Awards' past role in maintaining standards. "The CNA's pre-eminent role in stimulating the achievement of institutions and their staff must be acknowledged," it says. It praises the CNA's for upholding

standards comparable to those in universities while accommodation and encouraging innovation and flexibility.

But the NAB adds: "Given the diversity of institutions in the public sector and their differentiated academic maturities, a uniform policy may no longer be appropriate. Whatever the outcome of the Lindop Inquiry, the crucial importance of maintaining a system of external quality assurance of courses based on peer group assessment must be reaffirmed. An external examiner system on its own is not adequate, and a national framework of monitoring and review is much to be preferred."

On the contentious issue of ranking courses, the NAB says that quality assessments must be used to support (or to determine) decisions about the future. The dynamic characteristics of quality evaluation must be understood and the importance of potential as well as past performance taken into account when quality assessments are used in making planning decisions.

Looking towards the future

Identification of the public sector with vocationalism or "relevance". A policy which identifies one side of the binary line as more vocational than the other is neither accurate nor helpful. Institutions in both sectors seek to meet the needs of the economy on the basis of their particular strengths and historical development.

The polytechnics and colleges have also met the third and fifth objectives of the binary policy: A diversity of provision and a spread of locations have been preserved.

The NAB reaffirms the principle of dispersed access as a major objective and also commends the growth in access courses to help those without standard qualifications to enter higher education.

On the most contentious element of the binary policy, the issue of social

control, the NAB identifies three separate components: external validation, course approval, and local authority control. On the first it reiterates its support for some form of external validation and its doubts about the effectiveness of external examining. On the second it argues it is now time to ease the system of detailed course control, but insists that regional advisory councils still have a valuable role to play in planning.

On local authority control, the NAB recommends that this should continue but urges local authorities to allow their institutions to maximum possible freedom. It appeals for relationships based on "mutual confidence, esteem and cooperation."

"The local education authority must be concerned with the strategic objectives of the institution and with

agreeing its annual budget, but the removal of unnecessary duplication of effort will allow institutions to respond more quickly to changing demands and problems," says the NAB.

It adds that many polytechnics and colleges have now developed to the point where a greater degree of freedom from detailed academic and administrative controls may be both warranted and desirable.

The NAB strongly supports more cooperation across the binary line. On mergers it says the difficulties must not be underestimated, "but we are in no doubt that greater association between institutions must be encouraged, if necessary through the funding mechanisms." It regrets that universities play such a small part in cooperation at a regional level.

On cooperation between itself and

The final chapter of the NAB's advice deals with two issues, the future of the binary policy and cooperation between university and non-university sectors of higher education.

Five main objectives of the binary policy are identified: 1) to develop a sizeable non-university sector; 2) to provide more vocationally oriented courses; 3) to maintain and develop a diversity of provision in terms of mode, level and location; 4) to subject the non-university sector to more greater academic, administrative and social control than the universities; and 5) to improve access to higher education.

Commenting on these objectives, the NAB points out that despite the prospect of total student demand diminishing in the mid 1990s, those components of demand for which the polytechnics and colleges are the main or sole supplier of courses will increase and more than make up for this decline.

The NAB is less happy about the

The Great Debate: UGC advice Stressing the need for level funding

The universities could not satisfactorily teach the same number of students with fewer resources, says the UGC. But with "truly level funding", that is funding to provide the present levels of staffing, books, consumables etc, they could teach more students than they do now, says the UGC.

Calls for additional resources for shifting student numbers towards science and technology, expanding continuing education, etc, would be on top of this.

If resources continue to decline by at least 1.5 per cent a year (according to Government spending plans and the effect of pay claims), this will be a cut as high as that of 1981, but spread over a longer period.

"Substantial additions to the system and to national interests would be unavoidable... the role of the committee could only be one of damage limitation."

The UGC would have three options: to let the cuts fall evenly; to distribute the cuts unequally as in 1981, though not necessarily on the same pattern; or to remove one or two institutions from

the grant list.

Option one is the least attractive, the effect would be stultifying and there would be the greatest loss of quality. Option two would mean the closure of complete departments. Some staff could be transferred but many would need to retire prematurely and substantial compensation funds would be needed. But it might not be possible to do, because of the attempt to shift subject balance, and because of the obstacle of tenure.

So with extreme reluctance they would recommend the third option. They would give academic advice to the Government, but the choice of institution would have to be made by Government because "we could not assess the non-academic factors involved (and) our present relationship with universities, on which our ability to do our job depends, could not survive making such a choice."

But the committee says it does not entirely understand the implications of option three, either for the Government or the institutions. "If an institution were removed from our grant list



without being provided with any other source of public funds, it would probably be unable to continue to function.

"Yet it would at the least have better qualified staff and students and better facilities than most institutions in the public sector. To let its assets go to waste in this way would be a loss to higher education and to the nation which could not be defended."

They also propose a longer term planning horizon for grant, a firm figure for next year and a provisional one for the next three years.

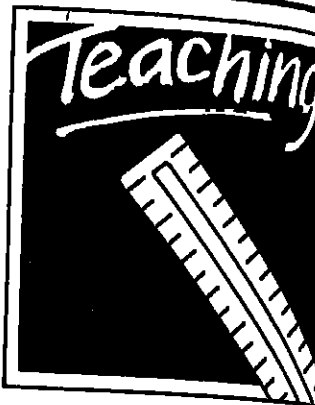
The UGC intends to consider changes in the way it funds the universities, although it is not explicit in how it will do this. But it is conscious of criticisms that universities do not know

how grants are determined, what weight has been given to certain activities, and how much is for research.

There would be two possible grounds for an increase in grant, the excellence of a university's teaching or proposals for new courses leading to a rise in student numbers, or an improvement in the university's reputation for research.

The committee estimates that some £300m should be provided to bring the equipment grant to its proper level. As a result there is not enough equipment, some of it is obsolete and staff and students cannot keep up with rapidly developing subjects. So they recommend an immediate increase of 25 per cent.

On capital grant, although an increase of 50 per cent could easily be justified, it should at least be held at its current value in real terms for the next two years. They also say universities should be able to keep up to £200,000 of the proceeds of sale of property, for building purposes, and the UGC should have more authority over managing capital assets.



Universities must give schools lead

Universities must give a positive lead to encourage schools to change the pattern of sixth form education, say the UGC. They will need to modify their entrance requirements and admissions policies to encourage applicants with a broader range of subjects.

The committee is convinced there should be a broader sixth form for all, not just for those who prefer it. In particular we believe that school leavers today can be regarded as having a balanced education only if they have followed courses in both arts and sciences throughout their secondary schooling.

Through their admissions policies and attitude to examination reform the universities "have helped to maintain a degree of specialization... which in our view has not been to the advantage of most students." So current Government proposals for AS level exam courses are welcomed.

But although this will mean changes in the design and content of degree courses, the UGC is against structural changes. The universities consider the minimum three year degree course is necessary to do full justice to their subjects - anything less would undermine the standard of British graduates abroad. The committee agrees the three year degree course cannot be shortened but new needs may require modular courses and credit transfer.

Nor should there be any change in the intensity of courses, or, by implication, in the pattern of the academic year. The committee strongly believes that continuing education should not be seen as a major responsibility of the universities, alongside teaching and research, and say there is a case for providing a financial stimulus.

There must also be more equipment to satisfy the demand access to computing facilities, across the disciplines, to develop computer awareness for staff as well as students, is urgently required and staff must be able to develop basic software tools.

"Without these facilities, the universities will fail to meet the reasonable expectations of students who will already have experienced the usefulness of computers at school, and they will not be able to produce graduates with the skills and competence that are necessary for working and living in a modern technological society."

There is a pressing need for resources for teaching methods, although new technology will not reduce teaching costs significantly.

Government 'core' plus a little bit more

Although there is room for small increases in alternative sources of funding there is no scope for a major change in the balance between public and private funding of the universities, the report says. Government must provide a "core" of public funding.

As for other income, there is not much that can be done to attract large donations. But more could be done to attract smaller donations, particularly from alumni, although the whole institution needs to be committed to the exercise.

The UGC says that universities' grant used to be a "deficiency" grant because it was reduced by Government to take account of other income.

This is no longer true but universities do not know of the change, and sometimes the Government implies that additional income will reduce funding.

There can be fewer stronger disincentives for industry, so what is needed is an explicit statement from Government revoking deficiency funding. In order to encourage universities and industry.

Government could also help with tax changes. Donations could be set against tax and gifts could be tax-deductible. The rules governing corporation tax could be relaxed to encourage donations of equipment. Fees for educational courses could be tax deductible. Universities could be

exempt from value added tax, and tax incentives could be used to encourage UK based companies to spend their research budgets in the universities.

The UGC notes that although universities have done a remarkable job in building up overseas student numbers again (they are now only 13 per cent below the number in 1979/80), they cannot rely on these funds. There is increasing competition from subsidized institutions abroad and supplies from particular countries may dry up at any time.

The committee reminds the universities they must obtain the right levels of overheads on their research contracts, and in fact they are to

review the situation. Government departments in particular must be warned they should pay the full cost of research.

The UGC also strongly supports the call for an industrial "seedcorn" fund as an incentive to university/industry links. But they warn that under present Treasury rules, science parks cannot be a source of income for universities. Although they are of benefit because of the improved contacts and stimulus they should not be seen as a "milk cow".

Finally, the UGC says there should be an increase in the number of postgraduates not financed from public funds. Wider availability of commercial loans would assist.

900 new jobs per year to ensure 'vitality'

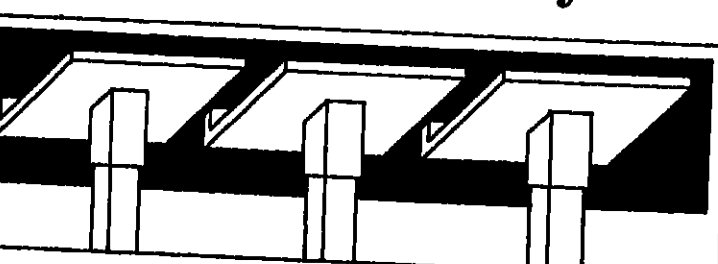
There should be at least 900 new academic appointments a year, to ensure intellectual vitality and effective teaching and research. Even this would be below the level of recruitment for a "steady-state" distribution and below the intake before the 1981 cuts, says the UGC, pinpointing the current imbalance in age structure and subjects.

Less than 30 per cent of all non-clinical academic staff are aged 50 or over and in a dozen institutions the figure is below 20 per cent. Less than 15 per cent of staff are under 35 and about 60 per cent are aged between 35 and 49. It says in a balanced age structure, 40 per cent of staff would be over 50, 20 per cent under 35 and 40 per cent between 35 and 49.

In terms of subject imbalance, mathematics has the highest proportion of staff aged 35 to 49, with only 20 per cent aged 50 or over. In physical sciences only 10 per cent are under 35, in social studies 25 per cent are under 35.

The UGC proposes that funds be provided to reimburse universities with 50 per cent of the cost of early retirement compensation. The current scheme under which the full cost can be offset, ended this month.

It would be prepared to implement a more radical scheme, offering severance terms to those under 50, but to make it workable considerably more



generous funds would be necessary. Lowering the age of retirement to 60 would give added flexibility but cost about £90m a year in superannuation contributions, so must be ruled out.

The committee wants to be consulted on proposed changes in tenure and is concerned to safeguard academic freedom. "However, any changes will have little or no effect on the universities' staffing problems over the period covered by this advice."

It regards as more "significant" the universities' ability to dismiss staff for failure to perform their duties. It was important to have an effective "good cause" clause. They also propose extending the probationary period to five years to give a longer time to consider decisions.

If recruitment falls below the new target of 900 there will need to be a "new blood" scheme for another four

or five years, although because of criticisms of the existing scheme, the UGC wants something simpler. They may also consider some kind of staff exchange scheme.

The report says that low pay settlements for lecturers have been acceptable in the past because of the long incremental pay scale. But now that about 45 per cent of lecturers are at the top of the scale pay negotiations were more difficult.

Academic starting salaries had also depreciated and universities were often unable to compete with industry. "We hope that the Government would regard the low academic pay settlements of recent years as a justification for providing the necessary money if a programme of restructuring could be agreed between the CUPP and the AUT." The pay machinery should also be reviewed.

Room for improvement - and a promise of change

The role of the UGC should remain unchanged but there is room for some improvement: it will be more open to decisions and advice, particularly grant advice; than before, and the frequency and organization of sub-committees will be examined.

The UGC hopes that groups of members will have access to the Secretary of State, not just the chairman. Their own substantial staffing cuts must also be restored. "The combined staff of the UGC and the NAB is less than the central staff of even the smallest research council."

The UGC says it should not be replaced by a representative body, as

this would be ill-constituted to handle issues of selectivity, and it would be seen as a pressure group for the universities so its advice would be discounted.

An overarching body is not necessary, the time is wrong for radical change, but existing bodies must work more closely together.

The NAB and the Welsh Advisory Body are still new and the Scottish tertiary body has only just been constituted. Although some critics had urged the possibility of a separate UGC for Scotland, "we believe that this would be disadvantageous to the Scottish universities, because it would

tend to separate them from the rest of the university system in the United Kingdom."

But the UGC recognizes the need for better coordination of higher education in Scotland. It will be elaborating its views to STAC.

The report says it supports in broad principle the continuance of the binary system. "We believe that the condition for the inclusion of institutions on our grant list should be that they should have a substantial commitment to both teaching and research and they should be funded accordingly."

But they make the point that just because an institution has a certain

BOOKS Citizens in arms

Red Guards and Workers' Militias in the Russian Revolution
by Rex A. Wade
Stanford University Press, \$32.50
ISBN 08047 1167 4

A row of seven young men, wearing tatty hats and great-coats, with rounds of ammunition across their chests, stand sternly facing the camera, rifles against shoulders and bayonets fixed. In front crouch seven youths in peaked caps and military jackets, rifles at the ready. Sprawled along the ground in front of the group lies a young boy, barely clad in a metal helmet, jersey and breeches; he cocks a pistol nonchalantly towards the camera. This is the Red Guard of the Parvian metal works in Petrograd in October 1917, and this photograph testifies to the determination of these young men to defend the workers' revolution to the death.

In this meticulously researched and clearly written study, Rex Wade examines the role of workers' militias and Red Guards in the Russian Revolution of 1917. His focus is chiefly on Petrograd, the epicentre of the revolution, but he analyses the creation and activities of workers' armed bands in towns and industrial settlements throughout Russia, with particular attention to Saratov and Kharkov. His study is well-organized, his judgments balanced, and evidence is deployed judiciously. The tale he tells is a lively one and adds a vital piece to the jigsaw, being rapidly assembled, of the history of the Revolution "from below".

During the February Revolution workers' militias were established on a local factory basis to protect factory property and to uphold law and order in the working-class districts. They arose spontaneously, without the intervention of political parties, though inspired in part by the socialist ideal of a citizenry in arms. From the first, they clashed with the Petrograd City Duma which, under the auspices of the Provisional Government, set about creating an all-class, non-partisan police force subject to the official authorities. The eight months between February and October saw abortive attempts by the authorities, backed by the moderate socialists on the Soviet Executive Committee, to disband the workers' militias. The latter, however, were adamant that they would not submit to any non-proletarian body, and so in each locality of the capital workers' militias competed with the new civil militia, in a microcosm of "dual power".

As the unpopularity of the government deepened, so more aggressive, politicized formations were created - the Red Guards - committed to struggling against counter-revolution and to defending the gains made by workers since March. These Red Guards were backed by the factory committees and more militant city-district soviets, but

were independent of party control, and had only passive support from the Bolsheviks. In the teeth of fierce opposition from the Soviet leadership, the development of the Red Guards was slow, and the failure of the July Days set them back considerably (though Wade tends to minimize this). The real growth of a coordinated network of Red Guards came after the Kornilov putsch at the end of August. The sudden epiphany of ruling-class revenge spurred the workers to seek out weapons, to train in their use, and to finish each day's work with military drill in the factory yard. By mid-October, Wade reckons, there were nearly 200,000 Red Guards throughout the country. He thus reverses the recent tendency of both Soviet and western historians to scale down the number of Red Guards, though he blurs any distinction between the latter and the more apolitical militias. Again, swimming against the historiographical tide, he suggests that, in spite of ubiquitous complaints of arms shortages, weapons were in plentiful supply.

In October the Bolsheviks could rely on a powerful network of armed bands, consisting in the main of young

workers who, though by no means solidly Bolshevik, were determined to establish a soviet power. Wade argues that the Red Guards played a more active role in the insurrection than is usually assumed, suggesting that it was their ability to overcome opponents, rather than their doubtful military skill, which was crucial. Nevertheless, despite this importance, within a few months the new Bolshevik government concluded that the Red Guards were unsuitable as the core of a regular army. Their spontaneous and local character and their paucity of numbers seemed incompatible with the perceived need for a centralized, disciplined and efficient army. By the spring of 1918 the Red Guards had either dwindled away or been absorbed into Trotsky's new Red Army. They were thus the first of the popular organizations born of the 1917 Revolution to fall victim to a combination of circumstantial exigencies and the Bolshevik penchant for centralism.

S. A. Smith

Dr Smith is lecturer in history at the University of Essex.



Red Guards on a police-hunt in Petrograd, 1917.

Germany's example

Germany and Republican China
by William C. Kirby
Stanford University Press, \$35.00
ISBN 08047 1209 3

At first sight the enthusiasm displayed by a number of developing nations in the first half of the twentieth century for the German "model" of national development may seem surprising. Despite what is now seen as the unstable and feeble quality of the German experience in these years, events there inspired many in Asia, from the rulers of militant Bengali nationalism in India to the Guomindang elite in China. For China's new rulers, in particular,

Germany's progress represented the marriage of military and economic power, backed by a sense of national destiny and discipline, which offered hope to another nation humiliated by foreign incursions, riven by domestic rebellion, and still traumatized by the collapse of traditional society and values in the last decades of the old empire.

The initial German success in establishing close economic, diplomatic and cultural ties with Republican China came about largely because, after 1919, they did not behave like other foreigners. Having lost her Treaty Ports and sphere of influence in China as a diplomatic enemy, and thus was not seen as a threat in the same way as were others, especially the Japanese. Although before 1914 German traders had feared that any loss of extraterritoriality would weaken their position by demonstrating national weakness and decline, this proved not to be the

Weimar observed

Britain and the Weimar Republic: the British documents
by F. L. Carsten
Batsford, £17.50
ISBN 07134 4221 2

The papers of the British diplomatic service offer insight into much more than British diplomatic history. Britain's representatives abroad often sent back to London fascinating accounts of the political, economic and social conditions of the countries in which they were posted. While this may not necessarily have made British foreign policy more effective, it certainly is a boon to historians.

For his latest book, Professor Carsten has worked his way through no fewer than 1,300 Foreign Office and War Office files dealing with various aspects of German politics between 1918 and 1933. As one expects of Professor Carsten's work, this volume is carefully written and packed with information. Most historians of Weimar Germany should be able to come away with juicy quotes for later use: for example, the report by the British Commissioner in Cologne which noted that Konrad Adenauer "dictated government, with himself as Dictator, no doubt appeals to his imagination"; or the British embassy report which described Nazi instruction halls as "models of cleanliness" which "would gladden the heart of any British scoutmaster". While the documentary materials presented in this volume do not necessarily tell us what really was going on in Weimar Germany, they do give a fascinating picture of what some British observers believed was going on.

At the same time, one gains a good sense of the concerns which motivated British policy towards Germany during the Weimar period. The tendency of the British to make light of the threat from the right during the early postwar years, the unease with and even hostility towards harsh French policies in Germany during the early 1920s, the tremendous prestige which Gustav Stresemann enjoyed in Britain, the detailed knowledge which the British had of illegal German rearmament from the mid-1920s and their decision not to do anything about it - and much else - are well documented.

Professor Carsten also uses the British materials to reinforce interpretations which he put forward in earlier work, particularly with regard to the Reichswehr. He presents a consistently unflattering picture of the postwar German army and its politicized reactionary leadership, of the "state within a state" which, in his eyes, came to dominate political life after the Republic was destroyed. On the other hand, Professor Carsten paints a glowing portrait of Stresemann - and discovers, incidentally, that Stresemann was harshly critical of the Reichswehr, which he described as a "Wallenstein Soldiers' Club".

Fascinating though the source materials are, Professor Carsten's book has its limitations. In the first place, it is not quite clear what the subject is: is it Weimar Germany, or the formation of British policy towards Germany? A collection of documents does not hold a narrative together, and the lack of a clear theme or set of questions running through the book sometimes allows the narrative to become just one thing after another. Without an organizing theme, the book remains too detailed and complicated to be of much use to the undergraduate struggling with modern German or modern British history, yet is not sufficiently revealing to interest specialists.

In fairness, however, Professor Carsten set out neither to write a general text nor to apply some new theoretical perspective to the history of Weimar Germany. His aim was to show "the wealth of information in the British documents on developments in Germany between 1918 and 1933", and that he has done rather well.

Richard Bessel

Richard Bessel is lecturer in history at the Open University.

Volker R. Berghahn's *Militarism: the history of an international debate 1861-1979*, first published in 1981, has been issued as a paperback by Cambridge University Press at £5.95.

Autumnal flavour

1917: The Russian Revolution and the Origins of Present-Day Communism
by Leonard Schapiro
Temple Smith, £12.95
ISBN 085117 244 X

There is an irresistible poignancy about Leonard Schapiro's last book. In the final paragraph, Schapiro bravely identifies himself as "one of the diminishing number of surviving contemporaries, outside Russia, of the events described in the preceding pages". Before that almost hubristic claim could be published, Schapiro had passed away. Following hard upon the death of E. H. Carr and the retirement of Hugh Seton-Watson, Leonard Schapiro's death confirms the sense of 1982-83 being a watershed in the foreign historiography of the Soviet Union, a passing of the leading *troika* of an older generation of British historians of Russia.

In the volatile circumstances of his publication, the book is predisposed to

greet 1917 with respect, if not enthusiasm. In all conscience, it proves difficult to do the latter. Certainly, "the non-specialist reader for whom this book is primarily intended" is provided with a sound and concise narrative of Russia over the epic period 1917 to 1924. The approach is modern in the sense of being relatively even-handed regarding tsarism, sympathetic to the Provisional Government and respectful towards Lenin and Trotsky; the full weight of moral censure is reserved for Stalin and the system he represented. But the overall effect is of a curiously subdued, very standard chronicle of events.

The plethora of recent studies of 1917, registered in a haphazard manner, best displayed in the idiosyncratically selected bibliography. (To offer a single example, Allan Wildman's monograph on the Russian army gets an honourable mention but Norman Stone's more stimulating study is inexplicably omitted). Too brief to be any substitute for W. H. Chamberlin's classic two-volume *The Russian Revolution* (for which Schapiro expresses unbounded admiration), 1917 falls well short of being a comprehensive update on our understanding of that momentous year. Although the function of popularizer-scholar is certainly

not to be despised, Schapiro seems distinctly ill-at-ease in his unassuming role of intermediary between academic specialists and a wider educated readership.

This same "target reader" is promised "reflections produced over many years of study and teaching" but these prove disappointingly few and far between. The magisterial authority we have come to expect is rarely in evidence; there is little display of wisdom distilled from a lifetime of scholarship. Insufficient space or effort, for instance, is expended investigating the link between "Leninism" and "Stalinism", let alone attempting to substantiate the book's subtitle by tracing the relationship between the events of 1917 and "present-day communism" almost seventy years on. In this area, the points made often seem faintly old-fashioned. To spend over a third of the text on 1917 and less than one quarter on the period 1918-24 seems an outdated exaggeration of the importance of the "Year of Revolution" and a massive undervaluation of the impact of the civil war in both moulding the character of the infant Soviet state and preparing the ground for Stalinist takeover. Modern scholarship would rather suggest that the origins of present-day Communism

lie at least as much in the traumatic period 1918-21 as in the more dramatic year 1917. In a fundamental sense, the title and subtitle of the book are implicitly contradictory and incompatible.

A harsh critic might be tempted to dismiss 1917 as a typical work of retirement (particularly when covering the irreversible decline of moderate liberalism). But it might be nearer the mark to suggest that Schapiro has become something of a victim of his own splendid record and reputation. The great surprise of 1917 is that there are no surprises. Spoilt by the quality of Schapiro's past publications, the non-specialist alike will be disappointed by 1917's modesty of purpose and lack of novelty. It must be a matter of genuine regret that this northman's work is not one on which Schapiro's many admirers, myself included, would wish to play the academic spotlight.

Raymond Pearson

Dr Pearson is senior lecturer in history at the New University of Ulster.

BOOKS

Liberal tory

Lord Liverpool: the life and political career of Robert Banks Jenkinson, Second Earl of Liverpool 1770-1828 by Norman Gash
Weidenfeld & Nicolson, £16.95
ISBN 0 271 78453 6

Robert Banks Jenkinson became Lord Hawkesbury in 1804, and succeeded his father as the second Earl of Liverpool in 1808. He entered the House of Commons at the age of twenty-one, and held the Foreign Office under Pitt and Portland, and the War Department under Perceval before he became Prime Minister in 1812. His premiership, which lasted until he suffered a stroke in 1827, was the third longest ever. Yet he has never found a place in the Tory pantheon, and Disraeli's jibe that he was "the arch mediocrity" has stuck. Historians have been puzzled by a man who appeared to turn his administration inside out in 1822 by substituting "liberal" for "repressive" Toryism.

The period from 1791 to 1837 is no longer the historical desert that it was forty years ago, but there was room for a new life of Lord Liverpool, and this one is beautifully written. Professor Gash is warm when dealing with the relations between father and son, humane about the domesticity of Liverpool's blameless life with the evangelically-minded Louisa, and sympathetic to the stricken minister as irreversible infirmity sweeps him off to the vault in Hawkesbury church.

Professor Gash sees events through Liverpool's own Tory and ministerial eyes. July 1789 was not, we are told, a very favourable time for a young man to visit Paris. Republicanism is equated with anarchy, radicals not together in mobs (no church and king riots here), and Whigs are discredited by partisan prejudices. Juries which acquit are "sceptical or disloyal", the classes which are attracted to political liberalism are perverse, gentry who toy with parliamentary reform are misguided, MPs who attend to their constituents contribute to the weakness of government, and Parliament itself is capricious and unreasonable in demanding retrenchment. Politics take place at Cabinet level and above, Tories are patriots, and ministers are motivated by no other consideration than the national interest.

Contemporaries did, indeed, feel that there was much to be said in favour of Lord Liverpool. In debate he forsook rhetoric and sought "to explain, demonstrate and convince". Even his political opponents noted "the scrupulous justice with which he

handled the arguments of those who differed from him". Liverpool's combination of these "more than average talents" which "in their aggregate constituted a kind of composite talent of his own", enabled him to draw the best out of other people. Professor Gash has a case, therefore, in allotting Liverpool a large share of the credit both for Wellington's success in the Peninsular War, and for Castlereagh's peacemaking. For Canning's "new" course in foreign policy, and Huskisson's rationalization of tariffs at the Board of Trade.

Clashing personalities could combine under Liverpool when they could not serve together under anyone else. It is a pity, therefore, that Professor Gash does not pause for a page to draw a sustained comparison between Liverpool and Canning. Canning lampooned Liverpool as Jinks, Jenky, Hawky, Jinksbury and Jawkes. He was insatiable in his quest for recognition, and unpredictable in his demands for change. Ministers could neither do without him, nor prosper with him. Not surprisingly, then, colleagues looked on the dependable, equable Liverpool much as they might have looked on the rock of Gibraltar. Canning's reputation kept Liverpool

in the premiership, and when Canning finally succeeded to the first place, half Liverpool's cabinet resigned. When Professor Gash comes to the great interpretive problem of the ministry, the change of course in 1822, he offers two alternative explanations. The first, which involves an element of bravado, is to accept that there was a shift in the direction of events and hint that it was an alteration for the worse. Oppressed by Louis's death in 1820, and the spread of incipient thrombophlebitis from one leg to the other, Liverpool lost his calm, and allowed himself, for the first time, to be overborne by the more ardent spirits within the government. The second is to argue that the changes in policy, and particularly the move towards a "free trade" policy had already been formulated in the Prime Minister's mind in 1819. Looked at in this way, Liverpool turns into a prototype Peel, the last five years of his ministry become indistinguishable from the first ten, and, to drive the point home, "the Whig decade of constitutional reform from 1831 to 1841 becomes a mere interlude in the continuity of economic policy between Liverpool and Peel". Professor Gash has made out a strong case for his man, but the

historian must sometimes rise up to cross-examine the biographer, and when he does the results may not appear quite so favourable to Lord Liverpool. The Corn Laws apart, there were three grave issues to be confronted in Liverpool's time. If the Act of Union with Ireland was to be a success, the Roman Catholics must be emancipated. If government itself was to be carried on successfully, the income tax must be made permanent. If the constitution was to be preserved, there must be a reform of Parliament. As to the first, Liverpool made Catholic emancipation an open question, and personally took a lead against it. In this way he avoided a clash with the Regent/George IV, but allowed the prejudices of a single Hanoverian to frustrate the best hopes of reconciling the nations.

As to the question of income tax, Liverpool himself lamented that he and his ministers could not do what they ought ("do not be alarmed, I am not going to propose it"). The issue was not confronted, as the biographer of Sir Robert Peel knows better than anyone else, until 1842.

On the question of parliamentary reform, Liverpool and his ministers must take the blame for the obstinacy

with which they refused to grant separate representation to the large towns. Liverpool, as Professor Gash recognizes, presided over a British version of the *ancien régime* which held up for a few years "those organic changes which the altered circumstances of British society rendered inevitable". Catholic emancipation and parliamentary reform were conceded within a few years of Liverpool's departure, and both had to be conceded, moreover, to "agitation from without". Peel took it upon himself to emancipate the Catholics, but reform was a matter for the Whigs, and arguably the true monument to Lord Liverpool is the forty years of Whig and Liberal ascendancy from 1830 to 1874, in which Peel's ministry of 1841-46 appears as an interlude. Looked at in this way, it is not, perhaps, quite so surprising that Liverpool has not been accorded a place in the Tory pantheon.

John Prest

John Prest is a fellow of Balliol College, Oxford.

The first anarchist

William Godwin by Peter H. Marshall
Yale University Press, £14.95
ISBN 0 300 03175 0

In the 1790s William Godwin enjoyed an enormous reputation, but this was soon eclipsed. Regarded for a short period as the most original and profound radical philosopher in Britain he was at first vilified and then rapidly forgotten as the conservative reaction to the French Revolution took a firm hold on the country. Widely condemned for his influence on Robert Southey and William Wordsworth, for his frank and revealing *Memoir* of his first wife, Mary Wollstonecraft, and for his spurning of Percy Shelley, he was for many years dismissed as a utopian crank or an icy rationalist who held outrageous opinions on government, property and marriage. It was claimed that his ideas would destroy all order, hierarchy and family life. It was widely believed that his chief opponent, Thomas Malthus, had answered him once and for all in his essay on the *Principles of Population*.

After his death in 1836 a few radicals did continue to treat his ideas with respect and a small circle of scholars remained interested in his writings. It is only during the last twenty years, and mainly during the last decade, however, that his reputation has begun to recover some of its former glory. In these years there have been several major studies of both his philosophy and his novels; his greatest work, *An Enquiry concerning Political Justice*, has been republished as a Pelican Classic and his minor works have been reissued; and his relationship with Mary Wollstonecraft and his influence on her daughter, Mary Shelley, have been explored.

This major new biography follows closely on the heels of another excellent and substantial study of Godwin's life and thought - Don Locke's *A Fantasy of Reason* (1980). It fully confirms that Godwin is now recognized as the first and most capable exponent of anarchism, as a major figure in the development of utilitarian ethics, and as a pioneer in socialist economics and progressive education. Moreover, his novels are praised for their powerful psychological insights and acute social observations. Not surprisingly, Peter Marshall covers much the same ground as Don Locke and he reaches many similar conclusions. They both explore the arguments and the influence of *Political Justice*, analyse Godwin's best novel, *Caleb Williams*, and discuss the whole corpus of his voluminous writings on philosophy, history, literature, education, magic and so on. They both also trace Godwin's Dissenting background and his ambivalent relations with the British Jacobins, investigate his short-lived marriage to the tragic Mary Wollstonecraft, examine his long and daunting battle against bankruptcy, and measure the catastrophic impact of Shelley on his family life.

There are, however, some important differences in these two admirable

accounts of Godwin's life and thought. Peter Marshall's research is even deeper than Don Locke's, though his more strictly chronological approach is rather more laboured and his style is less lively. He provides more detail on Godwin's early life, on the contents, reception and value of his minor works, on the children's literature produced for the juvenile library, on his friendships with such men as Thomas Holcroft, Charles Lamb and William Hazlitt, and on his influence on such poets as Samuel Taylor Coleridge, Southey, Wordsworth and Shelley. Much more significant is Marshall's more detailed, more profound and more subtle treatment of Godwin's greatest work, *Political Justice*. He criticizes Don Locke for exaggerating the misjudgments and the unreasonable aspects of Godwin's reason and for overemphasizing the extent to which Godwin undermined his own philosophy when he came to realize the powerful influence of the passions and domestic affections. While Don Locke's views deserve respect, Marshall's analysis is both more substantial and more convincing.

Marshall provides an excellent concluding chapter which sums up Godwin's achievements and measures his impact on succeeding generations. In this assessment, however, and in many of his observations throughout the text, Marshall exaggerates Godwin's merits and he is rather too ready to excuse his behaviour and his failure to carry his own theories into practice. Marshall ranks Godwin as high as Thomas Hobbes, John Locke and John Stuart Mill. He judges *Caleb Williams* to be a literary masterpiece, and even rates Godwin's *Life of Geoffrey Chaucer* as a work of remarkable scholarship and critical insights. In defending Godwin's character Marshall refuses to recognize fully that he did possess any significant faults. He tries to deflect criticism with the curious statement, "His tenacity could easily be mistaken for stubbornness, his moral fervour for priggishness, and his seriousness for dullness". This implies that these accusations are unjust and unwarranted. Don Locke is more willing to acknowledge Godwin's personal failings and his study of Godwin's complex character is more penetrating and illuminating.

A biographer may perhaps be forgiven for trying too hard to defend his subject. Marshall certainly deserves to be praised for writing a major work of scholarship on an important and fascinating man. His publishers also deserve to be congratulated for producing a handsome book, which contains many fine illustrations and an excellent bibliography, all at a relatively modest price.

H. T. Dickinson

H. T. Dickinson is professor of modern British history at the University of Edinburgh.

The latest volume to appear in the New Grove Dictionary of Music and Musicians series of composer biographies is by John Deathridge and Carl Dahlhaus and is devoted to the life and work of Richard Wagner. Deathridge has rewritten the biographical chapters in the light of recent research. (Macmillan, £8.95 and £4.95.)

BOOKS

Children first

Child Custody and Divorce by Susan Malmud
Croom Helm, £16.95
ISBN 0 7099 1737 6

If, in general, judges need to be informed and up to date, this must be doubly important when decisions tend to be based on cultural and value-laden views in the field of human relationships and where knowledge is partial but is growing rapidly.

Susan Malmud makes a break with orthodoxy when she tackles the issues surrounding child decisions in divorce. She draws on legal and social history, sociology, psychology, social work and medicine in an impressive, well-documented work of scholarship. Not content with this Malmud is laudably practical in arguing for major changes in the approach to child custody so that due consideration can be given to the needs of family as well as child.

True, the law is ever-changing and constantly reinterpreted by judgments which to an extent reflect contemporary circumstances, views, and knowledge. So on what basis are and should judgments be made in matters of family life? The nature of families and the relationships of individual members to one another have been changing apace. Whose view of the family should prevail? And how realistically can court decisions give "first and paramount consideration" to the welfare of the child when that welfare lacks objective reality or definitive meaning? The fact is that judicial interpretation unavoidably changes "according to social and cultural values and beliefs about the basic social institutions of the family and of marriage". But how conscious and informed is that change?

Custody is no small problem. In 1981 about 160,000 children were involved when their parents divorced, and probably custody of 15,000 is contested each year. Responsible decisions about them are only possible if "the legal structure is located in its social context".

In her book, Malmud attempts to integrate various bodies of knowledge. She explores past and present law, the family in its historical and present social and economic setting, and the contribution of psychology to understanding children and childhood. She argues persuasively that the Victorian paternalism (custody to the father), more recent concerns about maternal deprivation (custody to the mother) and the "latter-day notions of psychological parenthood" (custody preserving the status quo) - all reflect responses to social values and to social change, notably the position of women. However, the argument is not always persuasive, as when exaggerating the adult-centred nature of the law's operation. Furthermore, the book is at times repetitive, as if the reader is expected to absorb only one of its sections. Perhaps this is to some extent inevitable - and it merely detracts from the fascinating blend of material used to illuminate the past and the present, and to press major change for the future.

Evidence shows that there is still little apparent long-term harm for children in divorce when sound post-



divorce experience and relationships exist. Thus, children of divorce are not necessarily "at risk". Moreover, mother and father can care equally well, and "the evidence suggests that the law should be concerned with the child's successful adjustment to divorce by protecting continuity in the child's relationships", it is with mother, father, siblings, grandparents. Therefore, Malmud argues, the law should "encourage parental responsibility towards children despite marriage breakdown" by means of joint custody but with residence order stipulating where a child should live.

If children of divorce are to be shielded most effectively from harm to their psychological or emotional health and development, the law and the courts have to take account of social science insights. This book represents a major interdisciplinary breakthrough in providing some of these insights; it has much to offer lawyers, social scientists and child care experts by their practising or academic. In essence it accords with the recommendation of Mrs Justice Booth's Committee on Matrimonial Cases Procedure for the introduction of family courts where children can hope to be more sensibly and sensitively dealt with. Perhaps before too long Britain will manage to avoid the horrors revealed by Walczak and Barnes in their recent research into children's views on divorce. Undoubtedly, the strength of argument for reform becomes increasingly powerful. How long before it is irresistible?

Peter Wedge

Peter Wedge is director of the Social Work Development Unit at the University of East Anglia.

Larger issues

Radical Political Economy: an introduction to alternative economics by Brian Burditt
Harvester Press, £15.95 and £5.95
ISBN 0 7108 0121 1 and 0126 2

Any critically-minded student coming fresh to economics now must be struck by the narrow positivistic stance of his chosen subject. The priority given to technical manipulation over understanding has fostered an intellectual sterility at the heart of the discipline. What students of economics are now expected to be numerate, they are not being taught to think. They are woefully ignorant of the large philosophical, theoretical and practical problems which preoccupied the great economic thinkers of this and earlier centuries. With the neoclassical paradigm again ascendant in a context of mass unemployment, such ignorance breeds political complacency. We face one of the most fundamental shifts in the theoretical assumptions since the war: full employment is no longer assumed to be the major goal of economic policy. But few economists seem to appreciate the social implications of this change in the moral constraints of postwar capitalist economics.

The student concerned with this tendency might well be inclined to turn to alternative traditions in economic theory. Hence a book like *Radical Political Economy* should be a welcome introduction to some of the radical critiques of mainstream economic theory and of the capitalist economy. The book succinctly summarizes the political economy of Robert

Glued to the box

Children and Television by Cedric Cullingford
Gower, £13.50
ISBN 0 566 00655 3

When is a major study of children and television a major study? Maybe when over 5,000 children have been asked their views on the programmes they have seen and remembered, about what they have and have not learnt, and about their pleasure or pain in watching the heroes and villains in news, comedy, cartoon and advertisement as they have sat in the early hours in front of the small screen. Maybe when the final account is peppered with quotations from the girls and boys who were involved, identified by sex and age; the authentic voices of a generation flatly recording in simple sentences the superficialities of their lives: "I did not concentrate on this programme to tell the truth: I ate my tea." (Boy 12). "You learn a lot from television. My favourite programmes are *Starkey and Hatch*, *Six Million Dollar Man*, *Bionic Woman*, *I like Charlie's Angels* as well."

(Girl 9). Or, perhaps, when the final account is peppered, to sneezing, with the citations of works of others; dense, though too often carelessly inaccurate, of reference.

And then maybe not. Cedric Cullingford has written an extraordinarily depressing book, depressing in content as he is the first to admit, but unfortunately also depressing in form. His

children watch television certainly - quite a lot of it (though how much precisely he does not say) - but their reports are consistent in their jaundiced, sophisticated indifference to what they see. And that indifference is not specific to television, but part of their whole way of life. Cullingford's children are bored. Their relationship to television is neither particularly active nor essentially passive. They take what they want from it, which is not often much. He talks of a "subtle, almost deliberately subconscious" entry into the world of television. Too cynical to be seduced, confident, apparently, in their perception of the difference between fantasy and reality, desultory in their search for entertainment and rejecting of anything that fails to entertain, these children seem to exist in that half-light of the flickering attention to the flickering screen. Depressing certainly, though perhaps reassuring for those who wish such reassurance, in the lack of the medium's capacity for sedition.

But who are these children and where do they come from? How much can be learnt from their voices? Cullingford tells us that they come from the North of England, from the depressed towns and villages of Cumbria and Lancashire, from Birmingham. With its large first and second generation immigrant population, and from Texas. Apart from some minor variations according to sex and age (as children get older they attend less and use their intellectual capacities less in relation to television; boys like cars and are less frightened of the news) there were, he says, no differences in response in the findings due to class, ethnic origin, domestic circumstances or the style of television programme

shown in different countries. Since this is, perhaps, the most important and significant finding of all, one might expect a clear and closely argued, methodologically precise account in justification. But it is absent. How the children were selected, what questions they were asked and by whom, how often, under what circumstances, what tools of analysis were used, what theoretical assumptions underlay their use, what controls were incorporated in the study - of these things there is nothing in the book beyond a brief reference in the introduction. We hear nothing of the children in a context other than that defined by themselves in relation to television; nothing of their families, their neighbourhoods, their groups, nothing of their class or ethnic background, nothing of their culture. Nothing of them as people. Their voices are as disembodied as their relationship to the screen.

Cullingford attempts to flesh them out, not by details of their lives or society but by endless references to the psychological and sociological literature, uncritical except in two cases and unintegrated into any coherent theoretical perspective of its own. Interesting ideas, on ritual, on the nature of entertainment, on fantasy and reality, come and go, undeveloped. The study too is disembodied. It is too trusting of the children's own self-defining talk. It does not succeed in getting beneath the surface of television's penetration of our culture.

Roger Silverstone

Dr Silverstone is lecturer in sociology at Brunel University.

Towards social priorities

Social Planning: a strategy for socialist welfare by Alan Walker
Blackwell, £17.50 and £6.95
ISBN 0 85520 453 2 and 454 0

The aims of this book are threefold, namely to argue for an alternative form of concerted social planning; to formulate a structural social policy; and to counter the subordination of social priorities to economic priorities. The introduction claims that "the essence of social planning, therefore, is the determination of social priorities", involving the development, implementation and evaluation of policy. Moreover, a socially efficient policy is one "that maximizes equality in the distribution of these three [resources, status and power] between different groups in society".

Social planning is concerned with the production and distribution of welfare in Britain. I suspect that Alan Walker is right to criticize the tendency to confine discussion of this topic to state intervention through public social services. He identifies this narrow approach as the social administration tradition, and in chapter two, argues for a broader perspective, recognizing that welfare is produced by a range of institutions, both private and public. In addition, welfare also has a control function in society, and the state uses it to reproduce capitalist values, for

instance by reinforcing the work ethic. Chapters four, six and seven, taken together, comprise what seems to me much the most interesting and worthwhile contribution of the book. Much of chapter four's account of bureau-incrementalist and rational-comprehensive approaches to social planning is impressively perceptive. However, the conclusion favouring a more radical approach, namely what Walker calls "structural planning" (and later "planning for need"), is not one that I find very convincing. Briefly, structural planning would be prescriptive, transformative (moving us towards a socialist society) and hence clashing with capitalist values, and highly democratic. What must surely remain very doubtful under present British conditions is its feasibility.

Procedures for allocation of funds by the Treasury to the social services in general, and for resource allocation within the Department of Health and Social Security form the principal subject matter of chapters five and seven. The latter is a particularly useful case study of planning practice in the DHSS, exposing its fragmentation, its concentration on operational rather than strategic matters (in line with the prevailing bureau-incrementalist philosophy, and the focus on development of existing services in relation to already recognized needs. Apparently, there is little attempt to assess need and hardly any development of measures of output of various services; consequently most discussion of resource allocation is performed conducted in terms of inputs. Since even in this framework, policy changes do occur, it would have been interesting to see some examples presented and explained.

Walker is at his weakest when discussing economics. In chapter

three, on economics and social policy, he criticizes the prevailing separation of social and economic policy and argues that social policy would emphasize distribution rather than economic criteria such as cost minimization or Pareto efficiency, suggesting that he is unaware of other economic criteria which already incorporate distributional aspects. Here and elsewhere he attacks the framework of financial planning within which social priority planning is conducted. The tone of such comments often gives the impression that he dislikes the idea of a budget constraint.

The discussion of planning the economy in chapter five is rather sketchy and is marred by some confusion over definitions. Thus at one point Keynesian demand management is referred to as the main form of planning used in Britain since the war, while two pages later there is a section on the introduction of planning in the 1960s. It is simply not clear from this and many similar occurrences in other chapters precisely what Walker means by planning. Furthermore, experience in Eastern Europe (and wartime Britain) suggests that planning based on priorities can only succeed if the high priority activities are few in number, widely agreed and well-defined. I doubt whether any of these conditions would apply to the production of social welfare in Britain since we simply do not know enough about either the relevant "production functions" or the relevant "needs". Finally, however one chooses to measure equality (and this is nowhere in the book even mentioned as a problem!) I see no justification for attempting to maximize it.

The last two chapters explain some alternative approaches to social and economic planning and set out Walker's own ideas on planning for need. On the latter, I am sympathetic to the view that greater democracy and a dispersal of power in our society would be desirable, but remain unconvinced that social priorities based on an undefined concept of need should form the basis for economic policy and planning. I rather suspect that all established, successful planning of a complex system such as social welfare has to be bureau-incrementalist, but the process of changing this kind of system can be stimulated by pressure groups and local campaigns. It is here that Walker's more radical ideas may find a more immediate application.

Overall, this is a stimulating book that should be read widely, albeit with a critical eye, by those interested in planning and social policy.

P. G. Hare

Dr Hare is reader in economics at the University of Stirling.

Maxine Berg

Dr Berg is lecturer in economics at the University of Warwick.

Alba's tactics of terror

Alba: a biography of Fernando Alvarez de Toledo, third Duke of Alba 1567-1582 by William S. Malby
University of California Press, £22.70
ISBN 0 520 0469 3

In the second half of the sixteenth century the name of Alba made Europe tremble. Alba was the iron duke who commanded the armies of the Habsburg monarchs and imposed their authority at the sword's point. The climax of his career came in the 1560s, when he was sent to restore order in the Netherlands and did so with ruthless untempered by mercy. The Council of Blood, which was his mouthpiece, dispatched more than a thousand men to the block, among them those proto-heroes of the struggle for independence, Counts Egmont and Horn. Thousands more were sentenced to death and only escaped by fleeing abroad. This was Alba's way of dealing with rebellion, and the tactics of terror which he devised provided a model which later generations have

been all too ready to copy. Yet Alba was not simply a well-born thug. As a boy he had been given a sound, if old-fashioned, education in the classics, and among the companions of his youth were Juan Boscan, who translated Castiglione's *The Courtier* into Spanish, and the poet Garcilaso de la Vega. Alba was deeply religious, and one of the consolations of his old age consisted in conversations with his learned and devout confessor, Fra Luis de Granada. He was also austere in his private life, and after reaching forty remained largely celibate. In fact he had many of the qualities to be found in Ignatius Loyola and in different circumstances he could conceivably have followed the same path, from soldiering to sainthood. But he could not escape his inheritance, which was that of service to the crown, nor did he ever try to do so. He placed all his talents at the disposal of Philip II, and subsequently of Philip III, and thereby condemned himself to a life of hard labour. In his own words "kings are born to do their will, and we, their vassals, are born to do their will like wise, and I certainly never thought of anyone, because I never thought to have any other will than their own".

Such a creed is a long way removed from present-day assumptions about the good life, and Alba needs not only to be set in his proper context but also interpreted to the modern reader. This is what William Malby sets out to do.

and he succeeds triumphantly. He is not so besotted by his subject that he glosses over his character defects and errors of judgment, but he brings out the difficulties of Alba's position, not least in the Netherlands. When Alba had been asked by Charles V what he would do if there was a choice, it would be better to part with Milan or the Low Countries, he had given an unequivocal reply. Milan was the linchpin of the Habsburg empire, since it joined Spain, Italy and Germany. The Netherlands, far distant and isolated, were indefensible and a drain upon imperial resources. The truth of this assessment became plain in the seven years that Alba spent as Philip II's viceroy in Brussels, for the quantities of men and money needed to hold the rebellious provinces in obedience were beyond the capacity of Spain to provide, even though she had the wealth of the Indies at her disposal.

Alba was eventually recalled in disgrace, and history has passed a harsh verdict on him. Yet after reading Malby's account of his long life one is left with considerable admiration for him and respect for what he achieved. With all his faults he was a great man, and Malby's biography is in every way worthy of him.

Roger Lockyer

Roger Lockyer is reader in history at Royal Holloway College, London.

BOOKS

Social facts

The Social Relations of Physics, Mysticism and Mathematics: studies in social structure, interests and ideas by Sal Restivo
Reidel, Dfl. 114.00
ISBN 90 277 1536 X

The Social Construction of Science: a comparative study of goal direction, research evolution and legitimation by Tom Jagtenberg
Reidel, Dfl. 110.00
ISBN 90 277 1408 3

Finalization in Science: the social orientation of scientific progress edited by Wolf Schäfer
Reidel, Dfl. 135.00
ISBN 90 277 1549 1

To what extent can scientific knowledge be independent of the societal context in which it is produced? These three books approach this great issue from very different directions, yet they are closely related in their argument. Restivo's generalized treatment of physics and mysticism as "social facts" has to be read in the light of Jagtenberg's close study of the social goals of scientists as they go about their research: these goals in turn depend on the degree of theoretical maturity of the science, and the extent to which it can be socially "finalized" - that is, deliberately put to general social use.

Non-scientific readers will probably think Restivo's work the most exciting of the three. It is certainly the most ambitious. He looks from many different directions at the efforts that have been made to establish parallels between modern theoretical physics and age-old oriental mysticism. He would like to demonstrate that belief in this "parallelism" is a distinctive intellectual movement, driven by deeper social forces, thus proving the social relativism of thought right to the hilt. Fortunately, his enthusiasm does not override his good sense. He admits, for example, that writers such as Fritz Capra who have pushed this line (in *The Tao of Physics*, for example) are probably driven mainly by the need to justify publicly their own personal combination of beliefs, and stay true to both the domains in which they have a stake. But there is a very unusual position, marginal to both domains: almost all physicists are as scornful and as ignorant of mysticism as mystics are of physics. Much could be learnt about the social relations of each of these domains by consideration of the reasons why they are poles apart in style and method, but as Restivo has to admit "the sociology of mysticism is more of an hypothesis than a field of inquiry".

The sociology of physics is not so clear either. An important factor could be a good understanding of the social relations of mathematics, which he would like to set in a Marxist frame. Unfortunately, this runs into the familiar contradiction between the disreputable "bourgeois" origins of modern mathematics and its notorious harmony with "objective reality". In desperation, he even commends the reactionary grandiloquence of Oswald Spengler, who asserted that there were as many number-worlds as cultures, but it is still not clear whether - as most mathematicians would confidently insist - these forms all converge on the universal mathematics of the west. It is not surprising that physicists with genuine mystical leanings, such as David Bohm, put aside their formal mathematical tools and try to express themselves in vague handwavings and even vaguer words to escape the bonds of our present scientific culture.

For this is what Restivo is really after. If our present scientific style is not unique and absolute, one might just possibly transcend it, and find the path to a new "epistemic strategy" - new ways of discovering and understanding - more in keeping with our hopes for the future than any of our existing intellectual disciplines. He pursues this goal into many exotic regions of contemporary thought, far outside the established natural and social sciences, but is not taken in by nonsense, and returns empty-handed. This is a fascinating journey to follow with him, but sadly fruitless.

Could we do better with a different

sort of map? Contemporary variants of the sociology of scientific knowledge sketch with a broad brush over very wide fields of culture, or else pretend to represent laboratory life with photographic accuracy, on the most minute scale. Jagtenberg charts science on an intermediate scale. Taking his cues from phenomenology, symbolic interactionism and cognitive psychology, he assumes that the thoughts and actions of individuals are constrained by "cognitive structures" which are not unique to the individual but are shared by "generalized others". Here at last is a sociologist who has read that grossly neglected masterpiece, *The Structures of the Life World*, by Alfred Schutz and Thomas Luckmann, and seen the need to explore the particular structures that give meaning to scientific action for its actors. That is to say, one cannot make any sense of what scientists are doing unless you ask them what they think they are trying to do. It is through a study of the goals of research work that one can begin to understand the relationships between scientists and with society at large. This could be said of almost any specialized calling, but science is probably unique in the complexity of the maps of possible futures that its practitioners carry around in their heads and refer to as guides to action. Try asking a scientist what he or she is going to do "next" (on a scale of an hour, a day, a week, a year, or even a lifetime) and you will quickly become aware of an interlocking intentionality of technical methods, theoretical interpretations, communicable results, career interests, academic practices, and societal demands.

Jagtenberg goes into deep theoretical waters to justify this approach to the sociology of science, although nobody accustomed to scientific life would regard it as very novel. Fortunately, his actual research on the subject is straightforward and natur-

istic. He chose two very active research groups in Australian universities - one on solar energy devices and the other on the biochemistry of schizophrenia - and went and asked people to talk about their work. Having first mapped out the research history of each group as a network of actions and events, he analysed the various goals towards which the action had been directed, on a larger or smaller scale. With some personal experience of research in the natural sciences - an essential resource in a study of this kind - he was able to enter fully into the "structures of meaning" carried around by the "natives" he was studying, and to relate them to their life-world contexts.

What he found was that these structures are remarkably stable over a period of a few years, that they have many sources and many levels. The goals of research may be established in the long run by political and social processes, and mediated by scientific, technical and vocational considerations. But the higher-level goals, which are significant for the "legitimation" of projects, do not remain for long in the minds of researchers, who are mostly taken up with narrowly technical issues. Thus, the members of the solar energy group believed implicitly in the societal value of solar energy devices, but they tended to relegate this to the background and to concentrate on the physics and engineering problems that they were encountering. Is this just another example of people building cosy little nests to protect themselves from change, or is it derived from the professional ideology of the scientist as an autonomous expert in his or her own specialty? Jagtenberg's study raises this issue, but does not resolve it. Unfortunately, it is precisely the sort of grubby human characteristic that Restivo would have to take into consideration in his desire to emancipate

omy certainly rallies the scientific community. This was the bogey raised against the notion of "finalization" when it was proposed some years ago by a group of sociologists at the University of Starnberg in West Germany. But the contributors to this volume - Gernot Bohme, Wolfgang van den Daele, Rainer Hollfeld, Wolfgang Krohn and Wolf Schäfer - make a much better case for the "Starnberg thesis" on the way that sciences develop than that clamour suggested. The notion of "finalization" is simple enough. Scientific fields go through three phases. In the "explorative" or "pre-paradigmatic" phase the research may be strongly motivated by external social interests, but the results achieved are of little value. Then there comes a breakthrough to a "paradigmatic" phase, where an effective theory becomes apparent, and laws to be developed within a relatively closed technical community. In the "post-paradigmatic" phase, this theory can be put to practical use, and research is directed towards technological applications. One can see this very clearly in the case of agricultural chemistry, which passed through these stages in the middle of the nineteenth century, and which can no longer be supposed to have as its research object a realm of nature independent of human actions and desires. In a finalized science, societal forces operate directly on the selection and definition of research problems, the specification of explanatory ideals, and on the conditions under which research is carried out. If this is the inevitable outcome of progress in science, then the threat to the autonomy of the discipline and of its practitioners can scarcely be avoided.

The sociologists of science have not been very kind to this thesis, mainly because it is too schematic. It does not mean, for example, that perspiration has finally triumphed over inspiration: even in a field such as classical hyd-

rodynamics, whose phenomena are all completely prescribed (in principle) by a single equation, the generation of plain and predict theories to describe, explain and predict those phenomena remains as challenging as ever. But it does remind us of some characteristic features of modern science which are often overlooked in grander visions. A research controlled nuclear fusion, cannot be dismissed as mere technological application: it deserves much more serious metascientific study than it has yet received.

The core of this book is the chapter entitled "Finalization revisited", which reviews the argument lucidly, and makes the essential point that modern science is in desperate need of just this potential for "critical reflection on its objectives". Autonomy in research may have been the initial model appropriate to a science in its earlier phases, where knowledge was being produced spontaneously rather than strategically, but it inhibits the more rational consideration of goals and interests that becomes possible as our understanding matures.

In their various ways, these books make significant contributions to the theoretical and practical issues of social relativism and social control of science. But they do not encourage Restivo's romantic vision of an ideal "epistemic strategy" to save the world. They indicate, rather, that we are now in an era of "strategic epistemologies", where the direction of scientific effort is falling into the hands of corporate societal enterprises - governmental, commercial, industrial and military - whose ultimate benevolence cannot be taken on trust.

John Ziman

John Ziman is visiting professor in the departments of humanities and social and economic studies at Imperial College, London.



Ice Islands, an anonymous engraving in the National Maritime Museum in Greenwich, reproduced in Barbara Maria Stafford's *Voyage into Substance: art, science, nature, and the illustrated travel account, 1760-1840*, published by MIT Press at £37.95.

Unending quest

The Discoverers: a history of man's search to know his world and himself by Daniel J. Boorstin
Dent, £15.00
ISBN 0 460 04662 4

Librarian of Congress Daniel Boorstin opens his book with a brief and forthright statement of his purpose: "My hero is Man the Discoverer." This he takes not history, science or something which combines these and many other modern fields of scholarly activity. Viewing man from the perspective of his unending quest for knowledge, Boorstin paints a vivid picture of this endeavour, passing through many centuries, and many civilizations along the way. The result is a highly readable narrative that carries the reader through a fascinating

account of man's past achievements. *The Discoverers* is composed of four main sections: time, the earth and the seas, nature, and society. The latter three should raise few eyebrows, covering (roughly) the history of geographical exploration, and the history of the natural and social sciences. The first section, however, is not what the reader might expect, taking up a theme recently brought to general prominence by David S. Landes's provocative *Revolution in Time: clocks and the making of the modern world* (Harvard University Press, 1984). Why the discovery of time counts as a major achievement equal to a major discovery in the natural sciences, however, is never satisfactorily made clear. Indeed this section does not seem to belong with the rest of the book.

Within each of his main divisions, Boorstin portrays a continuous story of success, with man progressing directly and inevitably to higher and higher levels of knowledge through an unending series of discoveries. The story, which unfolds in a consequently Whig history in the grand manner, and should be an inspiration to us all. Only

the successes are presented, and we seem to be back in the days of Samuel Smiles or, at least, in the heroic days of history of science when new scientific discoveries were seen to press man-kind unflinchingly forwards to an increasingly grandiose destiny. We hear nothing of the sceptical critique which invaded modern thought in the so-called scientific revolution of the seventeenth century. All false starts and failed schemes have been swept aside in a story of one success after another. Recent criticisms of such a viewpoint have emphasized the social dimensions of knowledge and the ecological crisis resulting from such discoveries and their consequences, but these are passed over with little comment.

I did not get the impression at any stage that very many of the "discoveries" Boorstin recounts had become accredited as such only after a somewhat laborious sifting process. For example, the procedure by which phlogiston, as a "central" factor in the chemical explanation of combustion, lost the day was not so straightforward and evident at the time of its "dis-

covery", and a long, critical analysis went into its overthrow. Indeed, this is one aspect of a major problem with the book. Little attention is given to the epistemological problems raised by "discoveries". Boorstin assumes throughout that a "discovery" is an entity clearly and immediately known to all. Although this may be the case in some instances - for example, geographical discoveries - it was not quite so simple with, for example, the discovery of the heliocentric system. Philosophers and philosophical issues are not considered very relevant to the issues raised. And problems such as the criteria for determining whether there were "men before Adam" are not considered. Yet this was central to a whole spectrum of problems of the seventeenth and eighteenth centuries.

Another element in the story which seems to have been unduly neglected is secularization. In order for "discoveries" to be made, attention has to be focused in the right places. In the west at least, the process whereby investigators were led to look at the world in a naturalistic way was a necessary stage before certain discoveries could be made. For example, so long as miracle, magic, and occult explanation served the intellectual activity which would result in discovery was severely curtailed. Boorstin's account frequently tells us what happened, but too often it does not explain how it came to happen. Although this may be the subject for another book, I would have liked to have seen more such analysis here.

Inevitably in a book of this complexity and range - and Boorstin is to be praised for making such a bold attempt at synthesis - errors of various kinds have crept in. Boethius is called a "Stoic", J. J. Scaliger an "Italian", and Lorenzo Il Magnifico is said to have lived into the sixteenth century to receive a dedication from Amerigo Vesputci. Generally, however, the standard accuracy is high.

The main value of *The Discoverers* is that it is a good read - entertaining and informative at the same time - and it should lead many readers to a deeper investigation of some of the immense number of topics covered. It will certainly not satisfy all of the criteria which specialists in many different fields might impose on it, as it is a synthesis of knowledge in a single individual to be master of them all. With this in mind, however, it is a delight.

C. B. Schmitt

C. B. Schmitt is a fellow of the Warburg Institute, London.

BOOKS

Finite element models

The Finite Element Method Displayed by Gouri Dhatt and Gilbert Touzot
Wiley, £18.95
ISBN 0 471 90110 5

An Introduction to the Finite Element Method using Basic Programs by D. K. Brown
Sany University Press: Blackie, £8.50 and £8.75
ISBN 0 903384 46 9 and 45 0

The finite element method, used extensively to model a variety of problems in continuum mechanics, is a method of approximation based on the subdivision of the domain of a simple mathematical function (usually a simple polynomial). To achieve an acceptable accuracy in the overall approximation, a finite element model must include a large number (hundreds rather than thousands) of small elements, so that the solution of realistic problems is only feasible with the aid of a computer. However, in any attempt to introduce the subject to students of engineering or mathematics, it is extremely difficult to illustrate the true value of the method without the use of computer codes, which student programmers have neither the time nor the skill to perfect. Consequently, many authors try to guide their readers towards realistic numerical experiments by including program listings as part of their text.

As computer codes are designed to be read by computers, the quality of any textbook as a work of literature deteriorates as the amount of code increases. If the listings form complete programs (as in both these books), they will be long and be accompanied by mundane details of data input and output. If these technical details are omitted, the program cannot be used; if they are included, they make the book unnecessarily long and very dull reading. Unfortunately, the alternative strategy of restricting the code listings to the key sections of the numerical computation is equally unsatisfactory, providing a long program into which the subroutines can be inserted. Program listings have another drawback: to ensure correct

working codes it is important to include computer-generated listings, hence high quality printers should be used. Dhatt and Touzot's listings are of the necessary standard, but Brown's seem to have been generated by a simple matrix dot printer and are almost unreadable.

As a general rule, it is unreasonable to expect the reader (assumed to be a student) to spend several hours at a keyboard typing many hundreds of lines of somebody else's code that they do not fully understand. The most acceptable arrangement, therefore, is to give limited listings and provide a machine-readable version of the complete programs, assuming these are intended for general use. In both these books, over one-third of the total number of pages are devoted to program listings and details of how to use them. The argument against providing a machine-readable version (particularly for Basic programs) is that they are not portable - that is, they are suitable for one machine range only. Such restrictions of the potential market may weigh heavily on the minds of publishers, but from an educational point of view it is better to train at least one group of students in the use of finite element software rather than present them all with portable (that is, machine-independent) programs that none of them can implement.

Apart from the decision to include program listings and to aim the books at the introductory level, these two texts have little in common. Dhatt and Touzot provide listings in Fortran, the lingua franca of all major numerical computing, whereas Brown uses Basic, the first language of most microcomputers, and aims his book specifically at undergraduates with access to a microcomputer teaching laboratory. Brown builds his introduction to the method by way of the analysis of pin-jointed frames, whereas Dhatt and Touzot assume that readers are not "steeped in the theories of structural mechanics" and they endeavour to illustrate a much broader range of applications.

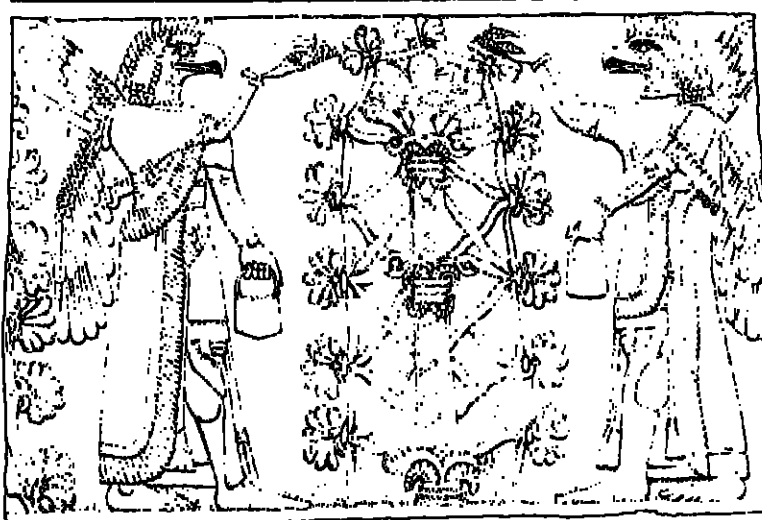
Brown avoids any significant discussion of the supplementary numerical techniques implicit in most finite element codes. He only uses the simplest possible linear approximation, so that numerical integration is unnecessary; and his programs are only designed for small systems (approximately 40 unknowns), so that large-scale matrix manipulation is inappropriate. However, there is only the briefest discussion of errors - a serious omission, as finite element solutions, after all, only an approximation.

Although Dhatt and Touzot have attempted to be more thorough and to provide more of the options available in a comprehensive finite element system, their book reads like a catalogue, with lists of element types and numerical integration formulae. It also suffers from the variable quality of the translation from French to English.

In view of the wide variety of finite element textbooks currently available, it is hard to see what an unfulfilled demand that will be satisfied by either of these books.

Richard Wait

Richard Wait is a senior lecturer in the department of statistics and computational mathematics at the University of Liverpool.



Relief from Nimrud in Mesopotamia (about 1500 BC), depicting two divine winged creatures each holding a male date palm inflorescence over a female tree - presented as evidence that the practice of artificial pollination is certainly not a modern one, in Baslaan Meese and Sean Morris's *The Sex Life of Flowers* (Faber & Faber, £12.50).

New inroads

Civil Engineering Systems Analysis and Design by A. A. Smith, Ernest Hinton and R. W. Lewis
Wiley, £14.95
ISBN 0 471 90060 5

The fundamentals which underpin all civil engineering activities come from a number of disciplines. Principles of physical science govern the mechanical behaviour of engineering works, economic principles govern the planning, construction and use of projects, and socio-economic considerations determine the interrelations between a project and society. Good engineering can be characterized as a delicate balance of all these factors.

Although it might seem obvious that the education of civil engineering undergraduates should reflect this balance, until ten or fifteen years ago civil engineering courses in British universities were heavily dominated by the mechanical sciences and almost completely ignored the economic and social aspects of engineering.

Although it might seem obvious that the education of civil engineering undergraduates should reflect this balance, until ten or fifteen years ago civil engineering courses in British universities were heavily dominated by the mechanical sciences and almost completely ignored the economic and social aspects of engineering.

Civil engineering systems have two basic themes: the development of mathematical models to represent practical engineering systems and the derivation of methods to manipulate and solve the mathematical models. Concentrating heavily on the former theme, this book presents an excellent treatment of an area which students find difficult to grasp. The book illustrates modeling techniques through practical examples

starting from the messy, unstructured problem statements typically found in the conceptual stages of a project. The processes of isolating appropriate engineering problems and preparing mathematical models which represent feasibility studies, planning, design and construction are well explained in a style of writing which is consistently good and is ideally pitched for undergraduate students.

In respect of solution methods for the mathematical models, however, the book is somewhat less valuable. Simple methods based on differential calculus are well presented, as are two chapters on linear programming and those on economics and critical path analysis. To be fair these topics plus mathematical modelling account for a large part of most present undergraduate civil engineering systems courses. However, other topics, such as nonlinear programming, networks, dynamic programming and probabilistic decision-making are rather weak as there is not enough space to do justice. On balance, then, I feel that the pages listing Fortran and computer sub-routines to implement parts of the numerical algorithms (though these are valuable) could have been used more profitably.

This book is a very good one, entirely suitable for undergraduate civil engineers. Although it never goes beyond the truly introductory level, it is so stylishly written that it should generate interest in the subject and a desire to study it further.

A. B. Templeman

A. B. Templeman is reader in civil engineering at the University of Liverpool.

Primary consumers

A Functional Biology of Free-Living Protozoa by Johanna Laybourn-Parry
Croom Helm, £16.95 and £8.95
ISBN 0 7099 1625 5 and 1678 7

During the first half of the three-and-a-half thousand million years in which life has existed on Earth, the dominant organisms were a diversity of single-celled, bacteria-like forms without cellular nuclei. Although these mostly absorbed food molecules through their surfaces, some developed photosynthesis, and diverse groups of them are still abundant. Among these organisms appeared unicellular forms of greater complexity, whose original hallmarks were the ability to engulf and digest bacteria and the separation of the genetic material from the rest of the cell by a nuclear membrane.

These were the Protista, adaptable organisms whose nutrition and life patterns diversified into many evolutionary lines, with various mixtures of animal and plant features. Some of these lines led on to the multicellular plants, fungi and higher animals, all of which have come to overshadow protists in most of the world's ecosystems during the past 700 million years. Although all organisms were formerly assigned to either the plant or animal kingdoms, bacteria and fungi are clearly different from green land plants, and, worse, scientific terms; and they may be misled by contradictory statements and errors of presentation.

The book is only a limited success, probably because of its author's attempt to cover too much ground in a limited space. As it is the second book published by Croom Helm on essentially the same theme this year (*Nutrition and Feeding Strategies in Protozoa* by Brenda Nisbet), a collaborative effort might have been more fruitful.

are adapted to their physical and chemical environments and how they relate to other organisms that share those environments.

Purposely omitting the many protozoan parasites, whose life-styles require different specializations, the book considers only free-living forms. Discussions of the trophic and ecological relationships of protozoans, which form the principal theme and best-presented chapters, are preceded by outline accounts of the feeding, digestion, reproduction, respiration, excretion, osmoregulation and movement of examples of representative groups. Line drawings, graphs and light micrographs illustrate the text, but sadly there is only one simple electron micrograph. There are many useful references and a thorough index.

Protozoans are not merely intrinsically interesting to biologists; they are also ecologically important, as they feed on smaller organisms and are fed upon by larger animals. Perhaps their most important role, as emphasized in this book, is as consumers of bacteria. Most significantly, protozoa enhance the recycling into food chains of the products of decomposition performed by bacteria in planning growth, as well as organic food for animals. Cooperative interaction between bacteria and protozoa is also vital in sewage purification and in the degradation of some pollutants.

To obtain full value from this book, readers need full understanding of the structure of the organisms concerned. They will also need to be forgiving about incorrect spelling of many names, common names and, worse, scientific terms; and they may be misled by contradictory statements and errors of presentation.

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Michael Sleight

Michael Sleight is professor of biology at the University of Southampton.

Organic factories

Photosynthetic Systems: structure, function and assembly by Susan M. Danke, E. Hilary Evans and Peter A. Whitaker
Wiley, £12.95 and £5.95
ISBN 0 471 10250 4 and 90178 4

Photosynthesis by Christine H. Foyer
Wiley, £26.95
ISBN 0 471 86473 0

What is most interesting about the dozen or so books on photosynthesis that have appeared during the past decade, is that they overlap to such a limited extent. It is clear that the field can be all things to all people; and this is what makes it so attractive to such a diverse array of research workers and teachers. New developments in genetics, regulation, energy mimicking (new ways of harnessing solar energy), physicochemical characteristics and physiological ecology (to name but a few) will continue to make it a compelling field of interest.

These two books continue the tradition in that they hardly overlap at the level at which they are pitched, although there is considerable similarity in their contents. However, both consider "photosynthesis" to be basically what goes on in the chloroplast; although there is some recognition that these organelles occur in cells, there is less recognition of the whole leaf, and hardly any acknowledgement of the whole plant. There is some effort, however, to recognize that photosynthesis also occurs in algae and bacteria - an advance on many other books in this field.

Photosynthetic Systems, which does indeed endeavour to bring together structure and function in a diverse number of photosynthetic organisms, is pitched at undergraduates in their first and second years and should meet the requirements for both physiologically and biochemically oriented courses. It might also be useful for advanced level courses in schools. However, although it is extensively

illustrated with over 110 figures and diagrams, these could have been much improved if shading, heavy lines, and so on, had been used to help emphasize points. Similarly, although there is much useful teaching information, this is poorly laid out on the page.

The book has four chapters: one sets the scene; the next two deal with electron transport and phosphorylation and with carbon metabolism; and a final chapter covers chloroplast development, genetics and evolution. There are three pages of brief descriptions of experiments (more would have been useful), extensive suggested readings and references (though very few after 1980), and a very useful index. Somewhat irritatingly, however, cross-references are made to sub-sections and not to pages; and some very naive explanations are juxtaposed with complex thoughts.

Photosynthesis endeavours "to discuss the many processes that are involved in photosynthesis, providing an accurate contemporary account of the pathways, their regulation, and interrelationships... for advanced students, teachers, and research workers". To the author, this means electron transport (one-third) and carbon metabolism (two-thirds) - again, a narrow brief, but one that is admirably fulfilled in this articulate and up-to-date monograph. There are some useful tables and diagrams, a few experimental graphs (from which conclusions are drawn) and two very interesting chapters on the chloroplast envelope and the interactions between the thylakoids and the stroma.

The referencing is quite extensive - sometimes idiosyncratic, though acceptably so for a book that tries to bridge the gap between the weighty review compilations, and detailed "text books"; and the index is excellent. However, better diagrams might have helped readers along some often complicated paths.

Teachers and researchers must still await a text on photosynthesis that integrates biochemistry, genetics, physiology, and whole plant responses to the environment.

D. O. Hall

D. O. Hall is professor of plant sciences at King's College London.

Colleges and Institutes of Higher Education continued

Education Service Luton College of Higher Education Appointment of Director

Applications are invited for the post of Director of Luton College of Higher Education from 1 January 1985, or as soon as possible thereafter.

The College has a wide range of full-time and part-time courses at both advanced and non-advanced levels, including CNA and BTEC validated courses, principally in Business Administration, Sciences, Technologies.

Applicants should have teaching and administrative experience at a senior level in addition to managerial skills of a high order.

The College is in Group 8 and the salary is currently £23,013 (under review).

Application forms and further details are obtainable from the Chief Education Officer (Ref. FEC 1), County Hall, Bedford MK42 9AP. Closing Date: 28th September 1984.

The Council is an Equal Opportunity Employer (1984)



Colleges and Institutes of Technology

Education Committee NORTH WEST KENT COLLEGE OF TECHNOLOGY VICE PRINCIPAL (GROUP VI)

Applications are invited for the above post from January 1st 1985 or as soon as possible thereafter. Suitable candidates will have had substantial successful management experience in FE, enthusiasm, energy and ability to handle significant areas of responsibility will be necessary ingredients as well as an active interest in promoting innovation.

Salary within Group VI range + London Fringe Area Allowance.

Further details and application forms are available from the Principal, North West Kent College of Technology, Miskin Road, Dartford, Kent DA1 2LU, (Telephone: Dartford 26471), to be returned by September 28th 1984.



Administration

CENTRAL COUNCIL FOR EDUCATION AND TRAINING IN SOCIAL WORK

Principal Social Work Education Advisers

Liaison and Development Division
of CCETSW's Central Office

£14,218 - £17,131 p.a. inc. LWA (under review)

To work closely with the Assistant Director for this Division in the development of policy proposals, preparing work programmes centrally and regionally, and the implementation of programmes within the Division. The Principal will also represent the Assistant Director when necessary at meetings at senior level with external organisations and manage the work of the Social Work Education Advisers and administration assistants.

The post calls for an understanding of contemporary practice, combined with the skill and confidence to represent CCETSW in liaison with other bodies at a senior level regarding complex issues. The postholder needs to be able to motivate and supervise the work of colleagues, sometimes on developmental work outside his/her own experience.

Head of London Region

£14,218 - £18,804 p.a. inc. LWA (under review)

The Principal is the Head of the London and South East Regional Office and leads a team of Social Work Education Advisers and support staff whose work includes course promotion, review and development, activity, the maintenance of links and collaboration with employers in the personal social services, educational institutions and professional groups within the region.

The postholder acts as CCETSW's senior representative based in the region, manages the work of the Office, and contributes to the perspective of the Region to central discussions.

Both posts require someone with a relevant qualification, preferably in social work, and experience commensurate with the seniority of the posts and gained in the field of higher or further education or in the training sector of an appropriate agency.

Further details and application forms are available from the Personnel Section, CCETSW, Derbyshire House, St. Chad's Street, London, WC1H 8AD. Tel: 01-228 9438 Ext. 281.

The closing date for completed applications is Friday, 5th October and candidates are asked to state clearly for which post they are applying.

CCETSW

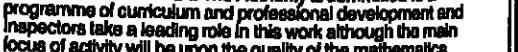
Education
General Inspectors (2 posts)
£15,027-£18,281 p.a. (Southbury Group HT Scale)
POST-16 EDUCATION

Applicants for this exciting and challenging new post should be well qualified and experienced persons who are currently working in or with schools and colleges. Nottinghamshire is expanding its support for curriculum and professional development activity in post-16 Education and the Inspectorate is committed to furthering this work. Candidates (male or female) are sought who can contribute to this comprehensive programme and therefore be able to demonstrate a broad range of skills and understanding, in particular the curriculum development concerns of schools and colleges as they meet the needs of a changing client group.

MATHEMATICAL EDUCATION
Applicants (male or female) should be able to demonstrate successful experience at a senior level in the field of Mathematical Education. The Authority is committed to a programme of curriculum and professional development and inspection takes a leading role in this work although the main focus of activity will be upon the quality of the mathematics curriculum in primary and secondary schools. We are seeking candidates who are committed general educators.

For both posts relocation expenses where appropriate. Application forms and further details are available from the Director of Education (Ref. A12) at County Hall, (a.s.e. with 24p stamp please). Closing date 3 October.

An Equal Opportunity Employer



Nottinghamshire
County Council
County Hall - West Bridgford
Nottingham NG2 7OP

City of
Manchester

Principal Administrative
Assistant

CONTINUING EDUCATION BRANCH

PAY AWARD PENDING

PO2 (£10,761 - (£11,703)

A vacancy exists for a Principal Administrative Assistant in the Continuing Education Branch. Applications are invited from women and men with degree or equivalent qualifications for this important administrative post. Lecturing or teaching experience will be an advantage, and it is not necessary for applicants to have previous administrative experience.

The City Council operates a Union Membership agreement under which a new employee is required to become a member of a recognised Union.

Application forms and further particulars from the Chief Education Officer, Education Personnel Office, Crown Square, Manchester M60 3BB. Tel: 061-228 2191 x 7916.

Closing date: 5th October 1984.

AN EQUAL OPPORTUNITY EMPLOYER

Administration continued

EDUCATION ADVISORY OFFICER

(Design Background)

Salary range: £13,950 - £18,090

The Business & Technician Education Council (BTEC) advances the quality and availability of work-related education for those in, or preparing for, employment in industry and commerce. At present there are approximately 400,000 students registered with BTEC in over 600 colleges and other centres, including schools.

As a result of internal reorganisation there is a vacancy, from 1 January 1985, for someone with a sound background in design to join the Council's team of Education Advisory Officers. The work includes active participation in curriculum development, the validation of courses and the provision of specialist subject advice to the Council's Boards and Committees.

Applicants should preferably have both relevant further/higher educational and industrial/commercial experience as well as appropriate academic/professional qualifications.

Although this appointment will be based at the Council's offices (in London), applicants must be prepared to travel extensively and regularly within the UK. Further details and application forms (which must be returned by 28 September 1984) are available from:

Anna Lorbeck, Personnel Officer,
Business & Technician Education Council,
Central House, Upper Woburn Place,
London WC1H 0HH.
Tel: 01-388 3288.



Education

Professional Assistant (Northern Area)

Applicants should be graduates with teaching experience. This post should be of interest to teachers seeking an initial appointment in LEA administration.

The successful candidate will be based in County Hall. Essential user car allowances. Car loan scheme. Approved removal expenses paid.

Salary £9,080 - £10,539 pa, currently under review (NJC APT C Scheme Points 31-36).

Application forms and further details from DP J Browning, CSE, MA, Chief Education Officer, County Hall, Bedford.

Tel: 03222 ext 345. Closing date 24 September 1984.

The Council is an Equal Opportunity Employer. (1984)



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University of Warwick

LECTURESHIP IN OPERATIONAL RESEARCH

Applications are invited for a Lectureship in Operational Research in the School of Industrial and Business Studies. The successful candidate will join a group of ten OR and Systems staff. The Lectureship holder will be responsible for the supervision of Postgraduate students, for the development of a research programme, and for the delivery of OR to practical problems and with a research record or the capability to develop a strong research activity. The successful candidate will teach students, postgraduate and post-experience students in the fields of Operational Research and Quantitative Methods.

The appointment would be made on the lecturer scale £7,190 - £14,125 p.a.

Further particulars are available from the Lecturer, University of Warwick, Coventry CV4 7AL. Reference No. 17/84/L. Applications should be sent to the Lecturer by 15 October 1984. (1984/17)

Further information and application forms are available from the Staffing Office, University of Warwick, Coventry CV4 7AL. Tel: 0246 223111. To be returned by 25 September 1984.

Thames Polytechnic is an equal opportunities employer. (1984)

Thames Polytechnic

School of Social Sciences TEMPORARY RESEARCH WORKER

The post is to provide temporary assistance on a postgraduate research project. Applicants should have a degree in Economics or Mathematics with some experience in computer use. The post is for a period of 18 months and will carry with it a salary of £5,636.

Further information and application forms are available from the Staffing Office, Thames Polytechnic, 100 Watlington Street, London SE18 3LH. To be returned by 25 September 1984.

Thames Polytechnic is an equal opportunities employer. (1984)

Japan Foundation

Endowment Committee

GRANTS FOR TEACHING AND RESEARCH

The annual income of a donation made by the Japan Foundation is available for the award of grants for the promotion of Japanese Studies in universities in the UK.

Further particulars and application forms are obtained from the Japan Foundation Endowment Committee, 100 Watlington Street, London SE18 3LH. To whom applications should be sent by 15 October 1984. Query ref: R157/81. (1984/81)

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Research and Studentships continued

GLASGOW COLLEGE of TECHNOLOGY

The College is a polytechnic type institution of advanced higher education which will be designated a Scottish Central Institution in 1985.

RESEARCH ASSISTANT

Salary: £6,516 - £7,042

Candidates must normally be in possession of an honours degree or equivalent qualification, and will be expected to register for a higher degree by research.

There is one post to be filled and applicants should be interested in any one of the following areas:

1. The use and development of input-output tables for the large firm.

2. Chemo-communication in primates: chemical analysis of exocrine secretions.

3. Clinical diagnosis in ophthalmic optics through "Expert" computer-based systems.

4. Ethnic minority communities in Scotland.

5. The monitoring of patients' vital signs (computer involvement may be possible).

Application forms from The Establishments Officer, Glasgow College

Overseas



ISLAMIC REPUBLIC OF IRAN
MINISTRY OF PETROLEUM

NOTICE

The Abadan Institute of Technology (A.I.T.) announces vacancies in the departments of Science and Engineering and invites applications for several faculty positions, effective 1984-85 academic year.

Candidates must be of Iranian National and must have distinguished academic and scholarly records, and the highest concern for teaching at college level.

Their principal contributions will be to teach part of a B.Sc. Curriculum in order to assist the school to maintain and increase its excellence as well as to meet the challenges proposed to engineering fields in modern times, in general, and to Iran's post revolutionary era, in particular.

The applications should include information relating to the following minimal qualifications:

1. Earned M.Sc. or Ph.D. degree and related experience in Chemical, Mechanical, Electrical, Petroleum Engineering, Computer Science or any major field in science (Mathematics, Physics, Chemistry, Geology). M.Sc. and Ph.D. 1984-85 prospective graduates are also welcome to apply for the aforementioned positions.
2. Teaching experience at the undergraduate level and direction of research or other related scholarly activities culminating in a college or professional degree.

Salary and ranks will be commensurate with degree, experience, and training. Resumes, letters of recommendation, and evidence of teaching capacity are desired.

Please forward application letters, recommendations letters, and University credentials to:

Recruitment Committee
Office of the President
Abadan Institute of Technology
N.I.O.C.
Ahwaz, Iran.



(10864)

Tenured Appointment Muresk Agricultural College SENIOR LECTURER NUTRITION/WOOL TECHNOLOGY

A unique opportunity exists for a suitably qualified person to further develop the teaching, extension and research programmes in animal nutrition, wool biology, wool production, wool handling and marketing at Muresk Agricultural College. The appointee would be expected to lead a teaching programme to produce graduates for the industry as a whole and extend the rapport with the industry through research and extension efforts. Applicants should have postgraduate qualifications in a relevant area and/or evidence of teaching, research and extension success in the wool industry. (Ref 689)

Salary range: \$33,331-\$38,847 (Aust)
Location: 96 km east of Perth near Northern.
Conditions include: for appointee and family plus assistance with removal expenses; superannuation.
Applications: Details include the names and addresses of three referees should be submitted in duplicate not later than 28 September 1984 to the Executive Officer, Western Australian House, 115 Strand, London WC2R 0AJ, from whom further information may be obtained. When applying please quote Ref. No. and Code HES.

(10789)

WAT
Western Australian
Institute of Technology

Tenured Senior Lecturer CHEMICAL ENGINEERING

The appointee will be responsible to the Head of Department of Chemical Engineering for assistance with the teaching programme and with the development of facilities for the Bachelor of Engineering degree course. Also participate in the research activities of the Department, which are directed towards the needs of industry in Western Australia and which include the supervision of postgraduate project work.

Applicants must have a good first degree in Chemical Engineering followed by substantial research or professional experience. A higher degree is advantageous. Particular background or interest in the fields of Process Modelling and Process Control is desirable. Applicants with lesser qualifications will be considered for appointment at lecturer level. Appointment is available from 7 January 1985. (Ref. 708)

Salary Range: Senior Lecturer \$33,331 - \$38,847 (Aust). These rates are subject to an increase of approximately 5% April 1985. Conditions include: for appointee and family plus assistance with removal expenses; superannuation.
Applications: Details including the names and addresses of three referees should be submitted in duplicate not later than 1st October 1984 to the Executive Officer, Western Australian House, 115 Strand, London WC2R 0AJ, from whom further information may be obtained. When applying please quote Ref. No. and Code HES.

(10790)

THE UNIVERSITY OF BOTSWANA

The University of Botswana invites applications for the post of LECTURER/SENIOR LECTURER/PROFESSOR IN SCIENCE EDUCATION

Qualifications

- (i) Ph.D. in Science Education with strong background in biological Sciences.
- (ii) Teaching experience.
(a) College of University Science Education and biology.
(b) Secondary School Science.
(c) Primary Experience desirable.
- (iii) Relevant Experience in a developing country desirable.

Responsibilities

- (i) Teach Science Content in Pre-Service Primary, Secondary, and Nursing Education programmes; teach Secondary Science Methods and Curriculum Courses in Undergraduate, Postgraduate, and Masters programmes.
- (ii) Supervise Student Teachers.
- (iii) Participate in curriculum development for Primary, Secondary and Teacher Training Colleges.
- (iv) Offer In-Service Courses and Workshops for teachers in co-operation with the Ministry of Education.
- (v) Conduct relevant research.

Highly qualified candidates may additionally be considered for the position of head of department. Experience in academic administration would be advantageous.

Post available immediately, closing date September 30, 1984.
Salary Scale: Lecturer P9,684-16,368. Senior Lecturer P15,804-18,072. Professor P18,072-20,892.

Expatriate Staff will be entitled to contract addition at 30% of basic salary and gratuity at 25% of basic salary plus contract addition on successful completion of a two-year contract.

Applications with names and addresses of three academic referees to reach the Assistant Registrar (Academic Appointments), University of Botswana, Private Bag 0022, Gaborone, Botswana. Closing date for applications is 30th September.

Stella M. Molele
Assistant Registrar

(10870)

International Relations

NORTHWESTERN UNIVERSITY

The Gordon Scott Fulcher Professor in Decision Making

Northwestern University will be appointing a distinguished scholar to the Fulcher Chair in the Department of Political Science. The Fulcher Professor will be expected to provide leadership in the development of international studies. As this field is understood at Northwestern, it combines comparative and international politics by placing a conceptual emphasis on the global system and on linkages between national and international phenomena.

The Fulcher Professor will:

- be broadly conversant with major theoretical and methodological approaches in comparative and international politics,
- have made significant contributions to scholarship in international relations,
- have demonstrated ability to work with the theoretical, substantive, methodological, and empirical facets of the field, and
- have a major interest in linkages between domestic processes and the global system.

The actual field of the Fulcher Professor's current specialisation is open. While he or she will have a national reputation as a major scholar in international relations, the Fulcher Professor's current interests might range from world order studies or international political economy to foreign policy decision-making or war and peace studies.

Interested scholars are invited to send their resumes and reprints of some of their recent contributions to:

Search Committee
Fulcher Chair in Decision Making
Dept. of Political Science
Northwestern University
Evanston, IL 60201

DEADLINE: November 15, 1984

Northwestern University is an affirmative action, equal opportunity employer.

(10871)

THE EUROPEAN UNIVERSITY INSTITUTE

Invites applications for about 30 twelve-month

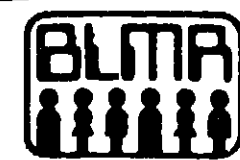
Jean Monnet Research Fellowships
tenable in Florence from 1 September 1985.

Candidates must present proposals forming a contribution to the Institute's research programme or on other European topics in History, Economics, Law, Political and Social Sciences.

Applicants should have a doctoral degree or equivalent research experience. Stipend according to age from Lit. 1,600,000 to Lit. 2,600,000 net per month. Further particulars and application forms available from the Academic Service, European University Institute, Badia Fiesolana, I-50016 S. Domenico di Fiesole (FI), Italy. Closing date 25 October 1984.

(10883)

Overseas continued



BUREAU OF LABOUR
MARKET RESEARCH

Research Opportunities in Australia

The Australian Bureau of Labour Market Research conducts, sponsors and co-ordinates research into the Australian labour market and government labour force programs and policies. It is the leading Australian centre for this type of research.

Applications are invited from persons with appropriate qualifications in economics, econometrics or other social sciences for several positions. Competence is sought in one or more of the following specialties: econometric modelling, sample survey experience, policy evaluation, forecasting techniques/procedures, macro economic analysis.

Principal Project Officers

\$A33,963-\$A38,143

Responsible for all elements of a major project, including detailed planning and investigation, overall direction and supervision, and report preparation.

Qualifications: Substantial ability and experience in research into labour market topics and demonstrated capacity to lead a research team.

Senior Project Officers

\$A31,531-\$A32,671

Assist in research planning and organisation. Undertake either individually or as a member of a team, research investigation and assist in the interpretation and reporting of results.

Qualifications: Ability to undertake high level research and experience in labour market topics.

Location: Canberra, Australia.

Successful applicants will either be appointed to the Australian Public Service or offered a term engagement for a period of two or three years.

Enquiries: For further information contact Dr W. Merrifield or Dr P. Sclerov on (61-62) 45 9303 and 45 9575 respectively.

Applications close on October 2, 1984 and should be mailed to:

Recruitment Officer
Department of Employment and
Industrial Relations
PO Box 9680
CANBERRA ACT 2601 Australia

ENGINEERING FACULTY

College at New Paltz, State University of New York, USA, seeks faculty at all ranks for its new undergraduate programs in Electrical Engineering and Computer Engineering. The Bachelor of Science in Computer Engineering will be the first offered within the State University of New York. Applications or nominations would be welcome for the following positions: Senior Professor or Associate Professor to Chair the new Department of Electrical and Computer Engineering. An earned doctorate in Computer or Electrical Engineering is required. Applicants for the position of Chair would be expected to have outstanding professional accomplishments to guide in the development of laboratories, and assist in the recruitment of staff and students. Experience in working with industry and community advisory boards would be highly desirable. Salary and benefits are highly competitive and will be based on education and experience. Positions are available for January 1985, and fall 1985. The College at New Paltz is located on over 200 acres in the scenic Hudson Valley, 75 miles north of New York City, at the foothills of the Catskill Mountains, and close to several major high technology research and manufacturing facilities. The College enrolls approximately 7,500 students in undergraduate and master's level programs. Nominations and applications, accompanied by a letter describing professional qualifications, a professional resume, and the names of three references should be sent to:

Dean Marleigh Gray Ryan
Box 10
SUNY, New Paltz
New Paltz, New York 12561
USA
Equal Opportunity/Affirmative Action Employer

Posts in Johannesburg South Africa

The following opportunities exist within the University of the Witwatersrand in Johannesburg and, in keeping with our policy, are open to members of both sexes regardless of race, colour or national origin.

DEPT. OF MEDICAL BIOCHEMISTRY Lecturer

Applicants for the post of Lecturer should be in possession of a PhD or equivalent qualification and should be prepared to assume duties as soon as possible after January, 1985. Responsibilities include the teaching of biochemistry to medical and science undergraduates and postgraduate students, research participation and some administrative duties. Applications should be lodged by 28 September, 1984.

DEPT. OF APPLIED MATHEMATICS Snr. Lecturer/Lecturer

We are particularly seeking a candidate with an active interest in Astronomy. Current research interests in the Department include Numerical Analysis, General Relativity and Cosmology, Interactive Optimisation, Control Theory, Classical Mechanics and Ecological Modelling. The successful applicant will take charge of the Elementary course in Astronomy. A good background in other areas of Applied Mathematics will assist in other Departmental teaching and interaction with research workers. Applications for this post should be lodged by 15 October, 1984.

DEPT. OF ELECTRICAL ENGINEERING Snr. Lecturers/Lecturers

The Department, located in the heart of South Africa's industrial area, has close links with industry and is currently engaged in several co-operative research projects with various manufacturing and research organisations outside the University. Senior Lecturers/Lecturers are now required in the following fields:

POWER SYSTEMS • ELECTRICAL MACHINES • INSTRUMENTATION • COMMUNICATIONS

The Department offers: a wide range of laboratory facilities suited to modern teaching and research activities; a substantial range of in-house Computing facilities; extensive industrial support and collaboration; the opportunity to undertake specialised consulting work for up to 8 hours per week; an established Continuing Engineering Education programme paying lecturers at professional rates. Applications should be lodged by 28 September, 1984.

(10807)



UNIVERSITY OF
THE WITWATERSRAND

Scholarships cont.

Monash University
Melbourne, Australia

FIXED-TERM

(3 YEAR)

LECTURER/

SENIOR LECTURER

IN EDUCATIONAL

ADMINISTRATION

Applications should be sent to the Registrar, Monash University, Victoria, Australia.

Enquiries to Dr W. Mellor.

Salary: Lecturer \$A24,850 - \$A33,351; Senior Lecturer \$A33,351 - \$A38,847 p.a.

Applications including Ref. no. 3 refer to the Registrar, Monash University, 15/10/84: (55085) 113

University of
Queensland

POSTGRADUATE
RESEARCH
SCHOLARSHIPS

These scholarships are offered for 1985 for full-time study in any department towards a Research Master's or Ph.D. degree.

Stipend: A\$6,150 plus allowance and assistance with travel costs.

Eligibility: Master's or first class Honours degree.

Commencing Date: up to 31 July 1985.

Duration: 2 years for Master's; 3 years for Ph.D. subject to satisfactory progress.

Successful applicants may also be offered the position of tutorial assistant, available in many departments, involving teaching duties of 180 hours per year and remuneration of A\$4,000 p.a.

Applications close 31 October 1984.

Application forms and additional information are available from the Registrar, University of Queensland, St. Lucia, Queensland 4072, Australia. Telephone: (07) 3366 4444.

Ref. no. 3 refer to the Registrar, University of Queensland, St. Lucia, Queensland 4072, Australia. Telephone: (07) 3366 4444.

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